THE DEVELOPMENT OF A MODEL FOR EDUCATION AND TRAINING IN ELECTRONIC RECORDS MANAGEMENT

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THESIS DECLARATION

TITLE OF THESIS: THE DEVELOPMENT OF A MODEL FOR EDUCATION AND TRAINING IN ELECTRONIC RECORDS MANAGEMENT

AUTHOR: RUSNAH JOHARE

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ABSTRACT

As the emphasis on accountability in the Electronic Government (EG) environment has increased, the interest in providing the requisite knowledge and skills for the employees and potential employees (i.e. students) to manage electronic records has been heightened. A number of initiatives aimed at providing educational and training opportunities for administrators, archivists, IT personnel and records managers to manage electronic records have been developed.

The primary aims of this study are: (a) to analyse the education and training programmes in electronic records management (ERM) for record keepers and develop a model, (b) to examine the needs of record keepers in relation to such knowledge and skills as are required to manage electronic records in the specific context of the EG in Malaysia, and (c) to provide a suitable vocational and professional education and training model for record keepers in Malaysia to acquire and maintain knowledge and skills required for the effective management of electronic records.

To achieve the above aims, the research adopted a case study approach that combined both quantitative and qualitative data to answer the various research questions. Quantitative data was gathered from a high level web survey of the national archives and related professional organisations world-wide to identify and examine education and training programmes for record keepers and current international best practice. A questionnaire survey and in-depth interviews were used to investigate and identify the roles and responsibilities of different record keepers in the Malaysian Federal Ministries, explore the context in which the record keepers managed electronic records, and examine their needs for education and training in ERM. Different software packages such as Microsoft Excel, Microsoft Access and NUD.IST (Non-numerical Unstructured Data Indexing Searching and Theorising) were used to analyse the data.

This study developed a generic model relating to vocational and professional education and training in ERM. It was based on a review of the various concepts on education and

training, as well as concepts underpinning the four pragmatic examples of education and training programmes in ERM developed in Europe and UK. This generic model was used to explore the emergent issues in Malaysia that were related to the need for knowledge and skills in ERM. The model was discussed and tested with the Malaysian record keepers through five focus group discussions. It was found that the generic model matched the situation in Malaysia, even though there were variations in the details due to the varying needs of the Malaysian record keepers within the EG environment and the Malaysian government bureaucracy.

The underlying concepts which underpinned the generic model for vocational and professional education and training in ERM developed in this study have been validated within the Malaysian public sector setting. Therefore this generic model must be understood within the specific context of the environment in which the fieldwork was carried out. In order to assess the extent of its universal application, similar projects employing the same methods but conducted in contrasting environments or in other countries have been found to have great value.

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It is my hope that this work will yield rewards. The results that are indeed important for my professional career development.

TABLE OF CONTENT

LIST OF DIAGRAMS AND CHARTS

ABBREVIATIONS

ACARM	=	Association of Commonwealth Archivists and Records Managers
ACCIS	=	The Advisory Committee for the Coordination of Information Systems
ADS	=	Administrative and Diplomatic Services
AHIMA	=	American Health Information Management Association
AIIM	=	Association for Information and Image Management
ANM	=	Arkib Negara Malaysia
ARMA	=	Association of Records Managers and Administrators
ASS	=	Administrative and Support Services
ASIS	=	American Society for Information Sciences
AV	=	Audio Visual
BBC	=	British Broadcasting Corporation
CEDARS	=	Centre for Electronic Data Archiving Research Systems
COMPASS	=	Computerised Archival Systems and Services
COS	=	Community of Science
CVE	=	Continuing Vocational Education
DIRKS	=	Design and Implementation of Recordkeeping Systems
DLM	=	Donnees Lisibles Par Machine
DoD	=	Department of Defense
DRO	=	Departmental Records Officer
EG	=	Electronic Government
EGIT	=	Electronic Government Information Technology
EPU	=	Economic Planning Unit
E-Procurement	=	Electronic Procurement
EPS	=	Electronic Procurement System
ERA	=	Electronic Records Archives
ERAA	=	Electronic Records Archival Assessment

EROS	=	Electronic Records from Office Systems
ERM	=	Electronic Records Management
ERM & IT	=	Electronic Records Management and Information Technology
e-TERM	=	European Training Programme in Electronic Records Management
EWE	=	Electronic Work Environment
e-SPARK	=	Strategi Pengurusan Rekod dan Arkib Elektronik Kerajaan
FDSC	=	Five Day Seminar Cycle
FE	=	Further Education
FID	=	Federation of Information Documentation
FOREMOST	=	Formal Records Management for Office Systems Technologies
GITIC	=	Government IT and Internet Council
GOE	=	Generic Office Environment
GPE	=	Government Paper Work Elimination
HE	=	Higher Education
HEFC	=	Higher Education Funding Councils
HRMIS	=	Human Resource Management Information System
IAs	=	Intelligent Agents
ICA	=	International council on Archives
ICASAE	=	International Council on Archives Section for Archival Education and Training
ICT	=	Information and Communications Technology
IFLA	=	International Federation of Library Associations
IMOSA	=	Information Management and Office Systems Advancement
IMU	=	Information Management University
INTAN	=	Institut Tadbiran Awam Negara
InterPARES	=	International Research on Permanent Authentic Records in Electronic Systems

IRMT	=	International Records Management Trust
ISO	=	International Organisation for Standardisation
ISS	=	Information System Services Scheme
IT	=	Information Technology
JISC	=	Joint Information Systems Committee
LISA	=	Library and Information Science Abstracts
LU	=	Liverpool University
LUCAS	=	Liverpool University Centre for Archives Study
MAMPU	=	Malaysian Administration and Management Planning Unit
MDC	=	Multimedia Development Corporation
MoReq	=	Model Requirements for the Management of Electronic Records
MPSR	=	Management of Public Sector Records
MSC	=	Multimedia Super Corridor
MSc	=	Masters of Science
NAGARA	=	National Association of Government Archivists and Records Administrators
NAPA	=	National Association of Public Administration
NARA	=	National Archives and Records Administration
NCVQ	=	National Council on Vocational Qualification
NIRMA	=	Nuclear Information and Records Management Association
NVQ	=	National Vocational Qualification
NDO	=	National Defense Operations
NHPC	=	National Historical Project Committee
NPO	=	National Preservation Office
NU	=	Northumbria University
NUD.IST	=	Non-numerical Unstructured Data: Indexing Searching Theorising
PSD	=	Public Services Department
RAMP	=	Records and Archives Management Programmes
RDIMS	=	Records and Document Information Management Systems

RECPRO	=	European Records Management Programmes
RIPA	=	Royal Institute of Public Administration
SAA	=	Society of American Archivists
SAE	=	Section for Archival Education and Training
SISPEN	=	Sistem Pengurusan Personal
SoA	=	Society of Archivists
SPIRT	=	Strategic Partnership with Industry – Research and Training
SS	=	Social Services Scheme
UBC	=	University of British Columbia
UCL	=	University College London
UiTM	=	Universiti Teknologi MARA
UK	=	United Kingdom
UKNA	=	United Kingdom National Archives
UMI	=	University Microfilms
UNESCO	=	United Nations Educational Scientific and Cultural Organisation
UNDP	=	United Nations Development Plan
USA	=	United States of America
UWA	=	University of Wales
VERS	=	Victoria Electronic Records Systems

PART 1:

FOCUS OF THE STUDY AND THE NATURE OF THIS PROJECT

- Chapter One - Introduction
- Chapter Two - Study Issues
- Chapter Three - Review of Related Literature
- Chapter Four - Methodology and Methods

CHAPTER ONE

INTRODUCTION

This chapter provides a general introduction to the study. It starts with an overview of the reasons why the study of education and training in electronic records management (ERM) for the record keepers was chosen in the context of Electronic Government (EG) in Malaysia. This is followed by the relevance of the study. The end part of this chapter provides a plan of the thesis outlining the individual chapters that follow.

1. Introduction

The Malaysian government has taken a pragmatic approach to the advance of information technology by establishing a mega EG project in the form of a Multimedia Super Corridor (MSC) amidst the legacy systems (Johare, 2001).

Through the development (in 1997) and the implementation of the EG systems and the existing legacy systems, the Malaysian Government has developed a 'roll out' plan whereby EG was expected to be extended to a wide range of functions by the year 2005. This was to include the day to day operations of 24 Federal Ministries and 118 Federal departments and the delivery of a wide range of electronic services to 24 million citizens (Maarof, 1998). This will include, for instance, the registration of births, registration for schools, the issuance of identity cards, filing of tax returns, voting, the issuance of home-building licenses, the transaction of social security and pension payments and finally the issuance of death certificates. The legacy systems and the EG also affect businesses in terms of registration, transaction of fees and tax payments, participation in government procurement, corporate registration and the issuance of import/export licenses (http://www.mampu.gov.my/EG/EG_EGFlags.htm [3 May 2002]).

The extent of the context as explained above indicates the volume of electronic records which have been created by the legacy systems and which will be generated by a much more dynamic environment through the EG systems. The development of the EG systems in the Malaysian public administration would have an enormous impact on

government recordkeeping in the fully electronic environment. This can threaten the government agencies' capacity to document the business of government in ways that will meet business, accountability and cultural needs (Johare, 2001).

Like the government of Malaysia, many governments around the world such as Australia, Canada, the United Kingdom (UK) and the United States of America (USA) are developing systems to conduct the main business of government electronically, with the evidence of transactions created, stored and retrieved on computers. In the Malaysian context, the EG refers to "A multimedia networked paperless administration linking government agencies within Putrajaya (the new administrative capital of Malaysia) with government centres around the country to facilitate a collaborative government environment and deliver efficient services to business and citizens" (Prime Minister's Department, 2005). The aim of EG is to move on to a paperless environment, with the only record being the electronic record.

The use of computers within the EG environment has led to rapid and dynamic changes in the way governments and businesses operate. One of the significant outcomes of computerisation is that managing electronic records now relies on IT and it needs to be integrated into the business processes of an organisation. Therefore ERM not only requires the involvement of key players in recordkeeping, such as record managers and archivists, but also IT personnel and administrators under a common shared responsibility to establish a credible ERM programme (Johare, 2001).

However, people with the knowledge, skills and abilities required to build a record keeping infrastructure that is relevant to the accountability and programme delivery requirements of the government have yet to be trained and recruited. Given these record keeping challenges, how will the Malaysian government proceed? While countries such as the UK and some of the European States have proceeded with developing education and training programmes, as well as a series of guidelines and toolkits on ERM for the key players, countries like Australia and Canada have embarked on large scale research on ERM.

McDonald (1998b), Hare (2003), as well as Mcleod, Hare & Johare (2004) have suggested that education, training and recruitment strategies should be established to ensure that the administrators, records managers, archivists and IT personnel who are responsible for the recordkeeping infrastructure in the government have the necessary knowledge, skills and abilities to perform their jobs. Based on these suggestions, education and training strategies should be designed for, and reach out to, the existing record keepers in the public sector in general and the Malaysian Government in particular.

2. Context of the study

The writer has a strong belief that the EG can be a success only if the record keepers such as the relevant administrators, records managers, archivists and IT personnel who are involved in electronic recordkeeping in the Malaysian Government have a positive approach and commitment to their work. A positive approach will stem from the knowledge, skills and attitudes of the record keepers through a well designed education and training model fitted to both the general trends of international best practice and to the national needs and objectives of the EG. The logical foundation for record keepers to acquire such knowledge and skills is in a positive and forward looking educational and training programme based on a model in the area of ERM.

There have been considerable changes in the socio-economic, administrative, cultural and educational systems of countries the world over as a result of the advent of sophisticated information technology (IT). The complexity of ERM and the diversified needs of various users add a new dimension to the problem of an education and training model and curriculum development. The records and archival institutions, professionals and educators are expected to respond to these changes which affect the profession. Records and archival education and training should reflect these changes in their program to produce record keepers capable of providing and maintaining the services in accordance with the required records management and archival standards and practices.

Malaysia is going through a period of active administrative reforms and development, hence an efficient records management service is essential to support such a process. Unless this need is met, the EG development plans, if they are not sufficiently supported by the ERM infrastructure, may never be achieved. The only way to achieve the results targeted is by ensuring the availability of an efficient ERM infrastructure that performs the functions of electronic recordkeeping needed to back up those EG development plans.

2.1 *The EG challenge: the widespread emergence of electronic records in the Malaysian Federal Ministries*

The increasing emphasis on electronic records in the Malaysian Federal Ministries has been the result of at least three developments. First, has been the rapid diffusion of personal computers as well as local and wide area networks, giving individuals the capability to create, access, manipulate, store, and communicate information on computers. At the Malaysian Federal Ministries and departments there are literally thousands of World Wide Webs and Intranet sites. Individuals can do such things as request travel allowances, check grades, order supplies, and share technical proposals using Intranets and the Web. The second way electronic records have taken a prominent position among active records at the Ministries has been with the emergence of open systems architectures, promising seamless communication across computer operating systems. Lastly, has been the emergence of computer-supported cooperative work systems, in which persons or staff collaborate and share resources over local and wide area networks as a result of the EG initiatives which have been implemented since 1997 (Government of Malaysia, 1997). "The implication is that information can be shared widely and openly; but this alone without control will prove detrimental to the administration. There is also the issue of digital access and preservation requirements with rapidly evolving and potentially vulnerable technology" (Hare, 2003).

According to the Prime Minister's Department (2005) electronic records at the Malaysian Federal Ministries serve five pilot EG applications for the public sector. They are the licensing and related vehicles services; utility payment; procurement; generic office

environment (GOE); human resources management information system (HRMIS); and the project monitoring system.

While the EG pilot systems are in the final phase of experimentation, the Federal Ministries continue running their daily business with the various existing systems. Some prominent legacy systems are still running in the following agencies (Prime Minister's Department, 2005): Immigration Department, Road and Transport Department, Ministry of Internal Trade and Consumerism, Land Survey Department, Ministry of Land and Co-operative Development.

A transformation from paper-based records to computer-based records is well underway at the Federal Ministries. Computer storage devices are replacing cabinets and bookshelves as electronic record formats become significant in record creation and retention. By 2005, electronic records at the Federal Ministries supported many of the critical functions of the Ministries from the creation of administrative records to archiving of personnel data.

These developments have an enormous impact on the capacity of government agencies to document official transactions in ways that will meet the standards of public administration. The problems faced include use of media that are unstable or unproven for long-term storage; risk of loss of critical records due to the use of software facilities or poor backup practices, the risk of tampering which compromises the integrity of electronic records as evidence, technological changes in hardware and software environments, and the fact that electronic information systems are generally not designed for the purpose of keeping records (McLeod, Hare & Johare, 2004).

2.2 *The technology challenges*

Changes in technology and multimedia have brought new types of records into existence. They are more difficult to identify and therefore challenge the record keepers' ability to capture them in a static or permanent form that will enable them to provide evidence of business or administrative transactions.

In traditional paper-based document systems, the media and format used for a record has been the same for the entire history of the record from creation, transmission, use, and reference, through to storage. There is no difference between preserving the form and preserving the content because of the permanent relationship between the physical format of the paper and the information it contains.

For electronic documents, the media and format of information can be changed during the lifecycle of the document, and the actual encoded format during authoring or creation, transmission and storage is almost certainly different in order to support the processing required at each stage (Hoffman, 1999). Therefore, the form of a record only exists when it is generated during authoring or creation, printing or viewing and may be slightly different for different creating and display devices.

This confluence of form and content also forces the development of information locator systems and carefully organised filing systems for paper based records. They are needed because the content of records may not themselves include references to descriptions of business processes and because the content of records is not directly searchable. However, electronic or digital records permit direct access to their content through indexing and search techniques. As a result, the approach to finding aids and search and retrieval can be completely different.

Reading and understanding information in digital form requires equipment and software, which is changing constantly and may not be available within a decade of its introduction. Who today has a punch card reader, a Dectape drive, or a working copy of FORTRAN II? (National Research Council of the United States, 1995a). Even newer technology such as 9-track tape is rapidly becoming obsolete. We cannot save the machines if there are no spare parts available, and we cannot save the software if no one is left who knows how to use it (Eisenbeis, 1995).

Due to the above issues, McLeod, Hare & Johare (2004) argue that "the life cycle model of managing paper records, where intervention was usually triggered by the age and use

of records, resulting in a physical relocation, is no longer adequate or appropriate in the electronic environment. In the electronic environment the priority is to ensure that, at the point of creation, the electronic record is captured and fixed with all of the attributes of recordness so that it can provide evidence of and information about the business transaction to which it relates". Therefore managing electronic records requires intervention at the systems design stage to guarantee appropriate creation and capture to ensure the integrity and authenticity of those records as evidence required for accountability.

Electronic transactions are in principle no different in nature from their paper counterparts; they need to be recorded, captured in a fixed form, maintained and made accessible as records. Electronic records should provide the same degree of evidence of business activity and support the same level of accountability for the immediate and future needs of organisations, individuals and societies. However, they are far more vulnerable than paper records and must be carefully managed to ensure their accuracy and authenticity as proof of accountability as the term preservation as applied to electronic records no longer refers to the protection of the medium of the records, but to that of their meaning and trustworthiness as records (Duranti, 1999a). Already there are chronic problems in reading, retrieving, decoding and accessing them over time, and there are a growing number of instances of gaps in the evidence required for accountability. These are the greatest challenges faced by the record keepers of our era.

The National Archives survey (2003) on electronic records in the Malaysian public sector revealed that a large portion of their records resided on tapes that the various Ministries could no longer get access to, due to technological obsolescence.

These technical challenges are not only faced by the Malaysian record keepers but also by all record keepers all over the world. The following are spectacular examples of failures in recordkeeping because of the technical challenges of managing electronic records:

- The USA Census Bureau could not gain access to its raw data from the 1960 Federal census because there were only two machines in the world capable of reading those tapes: one in Japan and the other already deposited in the Smithsonian Institute as a relic (US Census Bureau, 1993).

- Many electronic records of the former East German government are inaccessible to the citizens and present government of Germany because the relevant computer systems lack the necessary documentation, and the records are held on obsolete media whose condition has deteriorated (Crockett & Yeo, 2001).

- In 1964, the first electronic mail message was sent from either the Massachusetts Institute of Technology, the Carnegie Institute of Technology or Cambridge University. The message does not survive, however, and so there is no documentary record to determine which group sent the path breaking message (National Research Council of the United States, 1995b).

- Satellite observations of Brazil in the 1970s, critical for establishing a time-line of changes in the Amazon basin, are also lost on the now obsolete tapes to which they were written (Eisenbeis, 1995).

- The 1986 Domesday project in the UK, has acted as a reminder that preserving the medium (eg. floppy/hard disc or tape) does not automatically assure access to the message (Darlington et al in McLeod, Hare & Johare, 2004).

- During the spring of 1996, the inadequacy of procedural mechanisms for ensuring the authenticity of electronic records became a focal point of hearings held by the Canadian Commission of Inquiry into the Deployment of Canadian Forces in Somalia. As part of its investigation, the Commission found that the National Defense Operations Center (NDO) logs which were maintained in an automated database and which contained a record of all message traffic coming into National Defense headquarters from Canadian Forces' theatres of operation were being

tampered with as there were several anomalies, including entries containing no information, missing serial numbers, or entries with duplicate serial numbers. The Commission concluded that NDOC logs were not a reliable record of transactions at the operations centre either for present investigations or future researchers (Duranti, 1999b).

The above examples prove that electronic media can be more sensitive and fragile than paper and are also susceptible to obsolescence. Both hardware and software are constantly upgraded, and records created using earlier technology become unreadable. Electronic documents and data are usually easy to delete, and can be just as easy to amend or update. Both the survival and the readability of records can easily be endangered in the electronic environment.

Even when records survive, and can be read, further challenges remain: can the particular record that is wanted be found? Can it be read and understood? Can the user be sure of its authenticity? "Divorced from the controls associated with paper-based filing systems, an electronic record may convey little meaning to those who need to use it, as there is often no visible evidence of the context in which it was first created" (McDonald, 1998a). "If a record is required in legal proceedings, it may also be necessary to prove that it is genuine and complete, and that it has remained secure from deliberate or accidental amendment. If electronic records have not been managed effectively, such proof will probably be impossible to provide" (Crockett & Yeo, 2001). Thus designing and building systems that ensure the survivality, accessibility, availability and integrity of electronic records is a challenge that every record keeper and organisation needs to meet. However, the record keepers have not necessarily been made aware of their responsibilities (McLeod, Hare & Johare, 2004).

In order to face the challenges, the different record keepers need to be made aware and informed of their roles and responsibilities in regard to ERM. They need to be educated and trained afresh. Empowered creators and users need to learn about their new roles and responsibilities. They need to understand the methods of managing the records they

create and/or use; records professionals need updated knowledge and skills necessary to meet the new challenges; IT and other systems administrators need to understand the fundamentals of records management; and senior managers need to appreciate their role and responsibility for supporting good records management practice and its relationship with risk management, corporate governance and competitive advantage (McLeod, Hare & Johare, 2004).

2.3 *The National Archives' response to the challenges*

The pressures of technological changes and challenges in the Federal Government in Malaysia are eventually forcing the National Archives (central authority on federal archives management) to consider repositioning itself within the government EG infrastructure. The National Archives' approach in communicating the concerns on electronic records to the Government IT and Internet Council (GITIC) has made an impact. GITIC is a high powered decision making committee for the coordination and implementation of IT development in the public sector. It is chaired by the Chief Secretary to the Government. The Director-General of the Archives, being a member of the Council, managed to highlight the urgent need for the government to recognise the role of the National Archives as part of the GITIC mechanism. Through GITIC the issues of ERM are conveyed down the line to the various working committees such as the Committees on Smart Card, Telemedicine, Smart School, Implementation of EG, IT Technical Committee, Training and Education, the National Preservation of Government Information and the EG Steering Committee (Johare, 2001).

Efforts have also been made to educate and create awareness among the policy makers in government through national and international conferences, talks, discussions and meetings. The e-SPARK, a collaborative effort using international experts, has made further impact. The aim of the e-SPARK is to establish an electronic records centre, a joint initiative with the International Records Management Trust (IRMT) an international consortium of leading institutions associated with electronic records best practice (McDonald, 2003). Should the project materialise as scheduled, Malaysia will be exposed to the latest global thinking and will provide a best practice model for the

Southeast Asian region. To cope with the various challenges, the National Archives has reorganized its administrative structure in 2001, the Electronic Records Management and Information Technology Division (ER & IT Division) was established (Johare, 2001).

To raise its profile, the National Archives has to market itself within the IT and EG development mechanisms namely the Multimedia Super Corridor (MSC), Multimedia Development Corporation (MDC), government agencies as well as the research and academic institutions. In such a position the Archives should be able to communicate ERM concerns and issues to the institutional management and information technologists.

As pointed out by Hoffman (1999), this issue cannot be solved alone. There must be a multidisciplinary approach involving not only archives or public administration, but also research institutions and industry. On the other hand Granstrom (1999) asserts that cooperation between separate competencies and professions - business and commerce, administration and governments, scientists and researchers, legal profession and archivists - is necessary in order for society to benefit.

MacFarlane (1996) views this as a responsibility which spans into a wide range including government organisations, archives and the IT industry. In this manner it will enable broader information management to take into account the organisational, legal and operational needs for managing electronic records.

2.4 *The need for legal and organisational structure*

ERM starts with policy formulation and getting the organisation committed to making it work. According to Hill (1994), Acts of Parliament or legislation present fixed points of national policy. He defines a policy as 'a statement of a specific goal or goals which are to be achieved, or to be pursued, a statement of the means by which realisation of the goals will be brought about, an assignment of the responsibilities for implementation of the means, and a set of rules or guidelines regulating the activity. From the records management perspective, Barata & Cain (1999) concluded that a policy is a plan or course of action designed to influence and determine decisions, actions and other matters; it is a guiding principle or procedures. To them, the policy chosen will determine

changes to legislation, which in turn will determine standards, codes of practice, as well as education and training.

From the various definitions of policy one could conclude that there is a strong relationship between policy and legislation as a tool to direct organisations towards achieving their operational objectives. For example, policy and legislation is a strong component of the organisational framework established by the State Records Authority of New South Wales in dealing with ERM. The organisational framework is visualised as a pyramid with policy at the apex and training, services and support at the base, as shown in Figure 1.1 The various elements within the framework are interdependent on each other. Thus the policy cannot succeed without all the other elements supporting each other and forming a coherent whole (Barata & Cain, 1999).

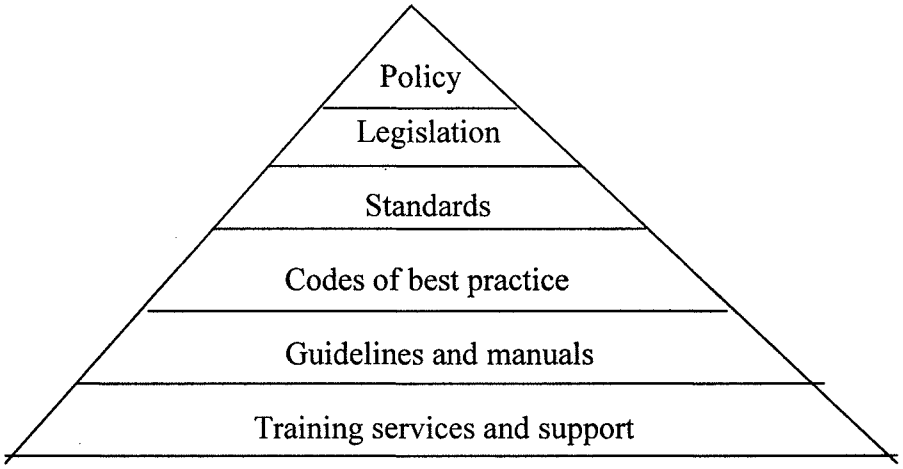


Figure 1.1: Organisational framework for records management

Source: State Records Authority of New South Wales, 'The Recordkeeping Regime', Government Recordkeeping Manual, 1999.

For Bearman (1994), policy represents a tactic of dealing with ERM, beside other elements of design, implementation and standards. He suggests that policy must include broad issues on record and recordkeeping, including definition of records and non-records; assignment of responsibility; legality; retention scheduling; appraisal;

integrating of access; documentation; storage; preservation media; preserving functionality; security; as well as education and training for record specialists.

From these viewpoints, it is considered vital for any national archives to establish an organisational and legal framework to ensure an orderly and effective approach including that of education and training for records specialists in order to establish ERM programmes, be it in the archives or in the government departments. From the example of best practice of the State Records Authority of New South Wales, it appears appropriate for the National Archives of Malaysia to establish a legal and organisational framework to achieve its operational objectives in dealing with ERM and consequently to assist the EG operations in Malaysia. Even though the National Archives has made a positive move in the right direction, there is still a long way to go before anything like uniformity is established across the government in terms of organisational and legal framework to manage electronic records nation wide.

2.5 *The need for research on electronic records in Malaysia*

There has been no research so far conducted in Malaysia to address the issues other than research conducted by the National Archives through the e-SPARK project in 2003 (McDonald, 2003). This project aims to establish an electronic records center at the National Archives of Malaysia. Due to unforeseen circumstances the project is behind schedule, and it is now due to be completed in 2006. In relation to the project, the Electronic Records Archival Assessment (ERAA) Report has recommended that the National Archives of Malaysia should develop capabilities pertaining to the archivists' knowledge and skills in electronic records and archive management. This would include the necessary IT skills and the capability to provide the expertise and advise to all staff across the Malaysian Government. This is critical as the inability to execute their roles and responsibilities will cause a major drawback in the implementation of ERM within the EG context (National Archives of Malaysia, 2004a).

By comparison, advanced countries such as Australia, Canada, the European Union, UK and USA have developed significant electronic records preservation projects at various

stages of research and development. They include proposals emanating from the British Standards Institute, the CEDARs project at the University of Leeds (http:www.leeds.ac.uk/cedars/-7k- [21 February 2005]) and the Victoria Electronic Records Systems (VERS project) in Australia (http://www.prov.vic.gov.au/vers/vers/default.htm [18 January 2005]). In addition, there are separate research projects on recordkeeping metadata -the SPIRT project at Monash University, Australia (McKemmish et al., 1999), digital storage - Rijksarchief, the Netherlands (Verachten, 2002), preservation of reliable, authentic and trustworthy records project -University of British Columbia and University of Pittsburg projects (Barry, 1997), and the latest being the InterPARES research project on permanent authentic records in electronic systems (which is expected to be completed in 2006) (Duranti & Thibodeau, 2001), (http://www.interpares.org/-17-[15 January 2005] . The products of these projects provide guidance for education and training for key players of ERM in the countries.

On education and training specifically on electronic records for the record keepers defined in this study, the Netherlands Archiefschool has run a five day training course namely the Five Day Seminar Cycle (FDSC) (Laeven, 1999a). Parallel to the Dutch training initiative, several academic institutions and archival organisations in Europe and the UK have developed a joint European training programme called e-TERM (European Training Programme in Electronic Records Management) (Shepherd, 1999). In the UK, the National Archives provides records management education and training programme (the rm3) for the record keepers in the UK government (McLeod, Hare & Johare, 2004). The Information Management University (IMU) training programmes in the UK is the latest addition to education and training programmes on ERM (http:www.aiim.org.uk/imu/imuniversity.asp-18- [14 June 2005]). Even though there are education and training programmes on ERM for the record keepers in question, until the time of writing there has been no research conducted on the international best practice for education and training on ERM for records managers, archivists, administrators and IT personnel.

3. Relevance of the study

Firstly, the fact that there is no international best practice education and training model for the record keepers defined in this study, in the EG context, and secondly the specific relevant context in Malaysia with the EG target provides an ideal situation to develop and apply the research product. The outcome of the study will be relevant for records practitioners (records managers and archivists), IT personnel and administrators. The findings of the research will lead to the development of an appropriate strategy for education and training in ERM.

3.1 *Relevance for records practitioners, IT personnel and administrators*

A model that is developed and tested with the Malaysian record keepers may inspire records practitioners, IT personnel and administrators by giving them suggestions or indications of how to improve their roles and responsibilities in managing electronic records not just in Malaysia but also in other countries world-wide. They may use these examples to widen their knowledge, understanding and competence in ERM. They may be stimulated to consider the extent to which the activities and strategies discussed might work within their specific situation or how they can adapt them to their own context and job specifications.

3.2 *Relevance for educational institutions and training organisations*

Students have been learning about ERM through the accredited programmes provided by academic institutions (universities and colleges) and on-the job and off-the-job learning provided by training organisations such as archival institutions, government training institutions and relevant professional associations. Since this study has enlarged insights into the development of a model of vocational and professional education and training programmes on ERM, the findings will be of direct importance for the records and archives educators in academic institutions and training organisations.

4. Plan of the thesis

The overview has discussed the reasons why the study of education and training on ERM for the different record keepers was chosen in the context of EG. This forms the broad

context for the inquiry, and identifies the contribution that the study makes in relation to education and training on ERM. Chapter 2 is devoted to the statement of the problem, the aims and objectives of the study, the assumptions underlying the study and research questions. An integral part of this chapter is devoted to definitions of terms, such as model, recordkeeping and record keepers, which underpin the investigation and an explanation of the rationale behind the definitions that have been adopted for application in this study. This part of the thesis also identifies the various different record keepers within the Malaysian public services in the context of their roles and responsibilities pertaining to ERM. Chapter 3 presents the review of related literature on the subject under study. Chapter 4 discusses the methodology and methods that were employed. It contains descriptions of the research paradigm and the philosophical framework underpinning this study, justification for the triangulation methods of data collection and analysis and the sampling strategy. Chapter 5 presents the construction of a generic model of vocational and professional education and training and is followed by the survey findings of the National Archival institutions and professional associations across the world in Chapter 6. Chapter 7 presents the critical analysis of the pragmatic examples of education and training programmes on ERM and the process involved in developing a generic model of vocational and professional education and training for ERM. Chapter 8 discusses the findings of the survey and in-depth interviews with the Malaysian Federal Ministries. This is followed, in Chapter 9, by the findings from the survey and in-depth interviews with the Malaysian National Archives. Chapter 10 discusses the findings of the evaluation of the generic model for vocational and professional education and training in ERM by the Malaysian record keepers. Chapter 11 discusses the results of the study and proposes suggestions for future research work.

CHAPTER TWO

STUDY ISSUES

This chapter presents the key foci of the study which include a statement of the problem. It then goes into the aims and objectives of the study and the assumptions that lie at the heart of education and training in ERM. The research questions derived from the aims and objectives are dealt with next. In order to place the issue of education and training of the record keepers in its context, this chapter also provides definitions of the various terms applied in this project.

1. Statement of the problem

The problem starts with the creation of electronic records. Millions of electronic documents are created every day in the public sector the world over. This places tremendous pressure and expectations on record keepers including records managers and archivists, administrators and IT personnel, who are seen as the key players in the creation, maintenance and preservation of records in electronic media. Thus, the creation, use, maintenance, dissemination, disposition and preservation of electronic records and archives have implications for the record keepers' education and training. The impact of electronic records can be felt in every area of records management including archival policies, work processes as well as procedures relating to maintenance and preservation of electronic records and archives for posterity. In Malaysia, there is a sense of urgency for the record keepers to be intellectually prepared for the time when the EG will be fully implemented across the Malaysian Federal Government. These issues have already been addressed in the UK and Europe where education and training programmes on ERM have been developed to provide the key players with the required knowledge and skills.

2. Aims and objectives of the study

There are three primary aims of the study. They are:

- to analyse education and training programmes in

ERM for record keepers and develop a model;

- to examine the needs of record keepers in terms of knowledge and skills required to manage electronic records in the specific context of the public sector; and

- to provide a suitable vocational and professional education and training model for record keepers in Malaysia to acquire and maintain knowledge and skills needed for the effective management of electronic records.

In pursuance of the above aims, the present study has developed the following objectives:

a) International education and training programmes:

- to identify the various international education and training programmes developed for record keepers defined in this study;

- to examine and analyse pragmatic examples, in Europe and UK in particular, of education and training programmes.

b) Need for knowledge and skills:

- to investigate and identify the roles and responsibilities of different record keepers in the Malaysian Federal Government;

- to investigate the situation in which the different record keepers managed electronic records;

- to identify whether the different record keepers received adequate education and training to support their roles and responsibilities to manage electronic records.

c) Education and training model:

- to evaluate the education and training model for ERM with the assistance of the various key players in the Malaysian public sector.

3. Assumptions

It is assumed that electronic records constitute a national resource which should be generated, organised, preserved, disseminated and exploited in the interest of good governance, accountability and the perpetuation of the nation's memory. Therefore, it requires qualified record keepers capable of performing these tasks resourcefully and efficiently in accordance with established standards.

The need to educate and train record keepers in ERM is a world-wide concern of all governments, and professionals alike. Records management and archives are matters of universal concern as they affect what is increasingly being considered as constituting the common heritage of humanity as a whole. In the Malaysian context, the government should:

- make provision for the development of a national education and training curricular in ERM for the purpose of equipping record keepers with the appropriate manpower requirements needed for the success of the EG.

- make provisions to upgrade existing levels of knowledge and skills needed by record keepers in managing electronic records; and

- develop a strategy of continuous education among record keepers, as well as engage in researching into ERM and related areas.

In Malaysia, education and training among record keepers is of central concern because of the implementation of the EG initiatives. This concern should be expressed in a more concrete manner by:

- developing a national education and training model for ERM in the country in tandem with the objectives of the EG;

- enhancing knowledge and skills among record keepers for the successful management of electronic records generated by legacy and electronic systems; and

- developing a strategy for continuous education among record keepers, and promoting research into ERM and related areas.

4. Research questions

Internationally, the records management profession is shifting its focus to issues such as the development of electronic recordkeeping systems and long term preservation of electronic records. This is to ensure that electronic records are available for as long as they are required for administrative purpose, and permanently thereafter when they are appraised and preserved as archives. Other than developing education and training programmes, countries such as the UK are preparing their record keepers with knowledge and skills in ERM. They began to do this through the EROS (Electronic Records from Office Systems) project initiated by the National Archives UK; and by developing a series of guidelines and toolkits for use of government staff as they move towards their EG target (http://www.nationalarchives.gov.uk/recordsmanagement [15 May 2003]).

The Malaysian government has embarked upon certain EG initiatives with 2005 as the target date. This needs record keepers who are knowledgeable and skillful enough to be able to manage electronic records and thereby help achieve EG objectives. Therefore the writer considers the record keepers who are the key players were the most appropriate stakeholders to be the focus of this study. By making them the focal point, the study was able to find out how electronic records were managed in the public sector and how they perceived the importance of managing electronic records in accordance to records and archival perspectives.

To operationalise the research question, three specific areas were selected for coverage in relation to the aims and objectives of the study:

a) International education and training programmes in ERM for record keepers and development of a generic model;

b) knowledge and skills for management electronic records in the context of the Malaysian public sector; and

c) a suitable vocational and professional education and training model for record keepers in Malaysia to acquire and maintain knowledge and skills needed for ERM.

These specific areas were then translated into more specific questions related to the aims and objectives of the study:

a) Questions relating to international best practice education and training models (both generic and specific to ERM):

- What are the characteristics of the international best practice education and training programmes?
- What are the underlying concepts which underpin the development of the best practice programmes?

b) Questions relating to the needs of record keepers in terms of knowledge and skills needed for effective ERM in the Malaysian context:

- What are the roles and responsibilities of the record keepers?
- What is the state of ERM in the Federal Ministries?
- What do the record keepers know?
- What do they need to know?
- What kind of ERM education and training opportunities exist within the public sector?

c) Questions relating to a suitable vocational and professional education and training model for record keepers in Malaysian Federal Government:

- Does the generic model of vocational and professional education and training in ERM match the needs of the Malaysian record keepers in the Federal Government?
- How should the model be tailored to match the specific needs of the record keepers in the Malaysian context?

5 Definitions of terms

5.1 *Model*

A clear understanding of the meaning of model is necessary for this study as one of the primary aims of the study is to develop a model of education and training.

Viewed from a purely linguistic perspective, the Advanced Learner's English-Malay Dictionary (Dewan Bahasa & Pustaka, 2000) describes the word *model* as "a preliminary solid representation, generally small, that is meant to be followed in construction: it is a pattern that is to be copied from."

Nachmias & Nachmias (1993) suggest that "in the social sciences, a *model* represents the characteristics of some empirical phenomenon. It includes the components and the relationship between the components of the phenomena. It represents a logical organisation of the concepts." Nachmias & Nachmias have formally defined a model as "an abstraction from reality that serves the purpose of ordering and simplifying our view of reality while still representing its essential characteristics based on related concepts".

In one of his early research investigations, Engelbart (1962) clearly indicates his notion of a *conceptual framework model* as an underlying representation of the phenomena that are being studied. It may be tacitly assumed or explicit. He claims that all research has a *conceptual framework model.*

Based on the above observations, the writer regards *model* as a simplified representation of a particular reality. In this study the reality is education and training in ERM for the records managers, archivists, IT personnel and administrators. Engelbart's (1962) notion of a *conceptual framework model* as an underlying representation of the phenomena investigated by research will also be referred to because this study aims at constructing the underlying representation of the particular reality of education and training in electronic records for the record keepers. The various ideas included here are closely related to the writer's perception of a model as a representation of the elements of a situation in a generic way.

To construct a model of education and training for the record keepers in managing electronic records, the writer explores further the various other related concepts and terminology such as education and training in Chapter Five as it relates to the process of constructing the model in that chapter.

5.2 *Recordkeeping and record keepers*

The definition of recordkeeping and record keepers is an essential component of the study because, in order to proceed, first and foremost, the writer needs to establish the range of players involved which include administrators, records managers, IT personnel and archivists as key players or stake holders for ERM. They are key players who will determine the nature of education and training for the management of electronic records. In addition, defining terms such as "recordkeeping" and "record keepers" is important, because firstly there is a definite need to clarify terms used in the context of the electronic environment; secondly practices differ from place to place and sometimes there are no local or national standards to fall back upon; thirdly, clear definitions could help resolve problems of differing administrative and archive traditions; finally it is important to define these terms in order to meet the requirements of record keepers so as to ensure they are able to fulfill the same organisational, legal, regulatory, professional and other requirements that apply to paper records. This provides the context to establish the kind of education and training that will be needed for these record keepers in managing electronic records.

Based on ISO 15489 (2001), and discussions by Bearman (1994), Brogan (2000), Evans (1990), Erlandsson (1997), Horsman (1996), Hurley (2000), Kilkki (2004) and McKemmish, Acland & Reed (1999) the writer is able to conclude that the term 'record keeping' should be understood as referring to the creation and maintenance of complete, accurate and reliable evidence of business transactions in the form of recorded information. The above writers suggest that the record keepers must fully appreciate their jobs and responsibilities in recordkeeping functions and activities aimed at protecting the integrity and authenticity of records as evidence of accountability in the electronic environment.

Based on the views of Barata & Cain (1999), Blethyn & Parker (1990), Cox (1992), Duff (1995), and Emmerson (1989), it is obvious to the writer that 'record keepers' is not an undifferentiated term. It includes various categories of personnel involved in the management of records, archives and information.

ISO 15489 (2001) clearly states that the electronic recordkeeping activities involves four groups of key players. They are record creators (senior managers/administrators and the various administrative staff) throughout the organisation; record users (managers/administrators and the various administrative staff); records management professionals (records managers/officers and other records staff/archivists/archives officers and archives staff); and technical staff dealing with design and maintenance of information systems in which records or archives reside (IT personnel such as information technology managers or management information systems managers and their subordinate staff including system analysts, programmers and data base administrators).

Based on ISO 15489 in this area of ERM, the creators and users of records, the managers of records and archives and the technical staff dealing with the design and maintenance of the systems can be termed as record keepers because they are directly involved with the creation, use, maintenance and management of electronic records. However within the limited scope of this project only four main groups of record keepers namely the

administrators, records managers, archivists and IT personnel were chosen as subjects of the study. Although other administrative staff, records and archives staff and IT staff at the lower level were included in the ISO list as having responsibility in ERM but they were not included in this study as they were represented by their superior.

5.2.1 *Record keepers within the Malaysian public services*

In Malaysia the machinery of government is made up of 24 Federal Ministries answerable to the Prime Minister. These Ministries are responsible for 180 Federal departments/statutory agencies, 347 state departments/statutory agencies, and 148 local government agencies. By June 2004, the Malaysian government was run by 1,152,358 personnel. (http://www.smpke.jpm.my/NewSMPKE/Intrenal%20Use/organisasi/Carta Org.../cabinet.ht [June30 2004]). Figure 2.1 shows the statistics of the public personnel by types of services and services groupings as of June 2004.

Figure 2.1. The statistics of the public personnel by types of services and groupings.

Types of services	Groups of services			Total	%
	SM	A&P	SUPP		
FPS	459	129,646	760,046	890,151	77.25
SPS	58	4,875	102,768	107,701	9.35
FSA	662	20,502	68,149	89,313	9.75
SSA	24	2,488	20,117	22,629	1.96
LA	7	792	41,765	42,564	3.69
Total	1,210	158,303	992,845	1,152,358	100.00
%	0.11	13.74	85.15	100.00	

*FPS: Federal Public Services
SPS: State Public Services
FSA: Federal Statutory Agencies
SSA: State Statutory Agencies
*SM: Super Scale Senior Management
A&P: Administrative and Professional services
SUPP: Support Services
LA: Local Authority

Source: http:www.jpa.gov.my/nperangka/june30 2004.

The government personnel administer the civil services which serve all the three branches of government namely the legislative, executive and the judiciary. They are under the direct control of the executive and their duty is to carry out the day-to-day business of the country, administering the laws, directing the social services and operating service

organisations. The Malaysian Parliament and the Cabinet rely upon the civil service personnel whose job is to advice the executive, implement its decisions and provide administrative continuity.

According to the Public Services Department (http://www.jpa.gov.my/ilmu/ssb/ssb.htm [22 March 2005]), at present there are currently 19 service classifications or grades in the Malaysian civil service with a total of 277 schemes of service. The record keepers defined in this study are confined to administrators placed under the Administrative and Diplomatic Services scheme (ADS), records managers under the Administrative and Support Services scheme (ASS), archivists from the Social Services scheme (SS), and IT personnel belonging to the Information Systems Services scheme (ISS).

5.2.1.1 *Administrators*

Administrative positions within the civil service[1] at the Federal level may be grouped either under the ADS or ASS schemes.

The ADS plan, administer and manage the government. They provide leadership to all the Ministries and departments under them as well as state government agencies. The ADS officers' primary tasks are to create and implement government policies such as the present EG initiatives. Some of the main functions of the ADS officers are:

- to manage economic resources;
- to manage financial resources;
- to manage information and communications technology (ICT);
- to manage organisation and human resources;
- to plan the infrastructure and social management;
- to administer the development of territories, districts and urban land;
- to manage international relations and foreign affairs; and
- to administer the security and defence of the country.

[1] In Malaysia, departments under the State Government; municipal authorities and statutory agencies have their respective schemes of services. This study focuses on the civil service at the level of the federal government.

The ADS officers occupy management level posts in the various Ministries and government central agencies such as the Malaysian Administration and Management Planning Unit (MAMPU) and the Economic Planning Unit (EPU), both of which are placed under the Prime Minister's Department. They are supported by the public administrative officers in the ASS categories who carry out the operational functions of the government.

As members of the civil service, these administrators appointed as heads of departments, or senior managers have ultimate responsibility for ensuring that records of their activities are created and captured within a recordkeeping system. The administrators, as creators of records, are responsible for ensuring that the records containing electronic information are accurate and complete and are retained properly for as long as they are required.

Administrators must inform records managers in their respective Ministries and archivists in the National Archives of the nature of their work and the resulting records, in order to help make decisions regarding the value of the records generated. At a broad level, they should carry out their responsibilities for electronic records by assigning responsibilities to all staff members within their agencies to manage all electronic and other records as part of a planned process; ensuring that the staff are aware of their responsibilities for documenting their activities and protecting the resulting records; integrating the management of electronic records with other records and information resources management programmes; and incorporating electronic records management objectives, responsibilities and authorities into general agency operations (Kandur, 1992).

Administrators in the Malaysian Federal Ministries should expect to receive technical advice from the records and archives institution, i.e the National Archives, on how to discharge these responsibilities. At a more specific level, administrators must ensure that their staff understand the relationship between their records work and the work of the archival institution. Staff must also understand the importance of an efficient and effective ERM programme. Therefore administrators or managers must have the

knowledge to manage electronic records in order to be able to discharge their responsibilities. As record keepers, administrators in the Malaysian Federal Ministries need to be included in the ERM education and training programme.

5.2.1.2 *Archivists*

The archival professional post in Malaysia is centered at the National Archives. The professional staff are known as Archives Officers. They are employed by the National Archives of Malaysia, which is in turn responsible to the Ministry of Culture, Arts and Heritage.

The archives service is a 'closed service' as archivists are not transferable anywhere else within the government administration. There are three levels of archives officers: junior level, middle level and senior level. The junior level is made up of archives officers who have made recent entries into the profession. They comprise university graduates from the various disciplines. In the National Archives administrative structure, this group of archives officers belong to the service code between S41 and S48 ("S" is for Social Services scheme). This is the lowest category of Division One officers in the civil service. The middle category of Division One officers are grouped under S52, S53 and S54. These are archives officers with 10 to 25 years of service, and who have been promoted from the entry level. This group of archives officers are expected to supervise the junior archives officers in carrying out their professional archival functions related to accessioning, arrangement, description, preservation and provision of archival reference services.

The junior and middle level archives officers require training in order to acquire professional skills and knowledge and also to enhance their prospects for promotion. At the top of the hierarchy are the archives officers in the Superscale C and B category. They are senior level archives officers with over 25 years of service. They hold managerial positions such as Director-General, Deputy Director-General and Heads of the various Management Branches in the National Archives.

5.2.1.3 *IT personnel*

The IT personnel within the Malaysian civil service provides technical support functions to the government administration. They belong to the Information Systems Services scheme of service (ISS). Their job description combines those of the information system officer, programmer, system analyst, system controller, systems designer and data processing operator. The ISS personnel are positioned at the technical IT units across the 24 Ministries, 180 Federal Government departments/Federal Statutory agencies, 347 state departments/state statutory agencies and 148 local government agencies (Abdul Karim, 2003). They execute Federal Government policies and plans formulated by the ADS inclusive of recordkeeping programmes and activities.

5.2.1.4 *Records Managers*

Besides archives officers and the assistant archives officers attached to the National Archives, there is yet another group of staff associated with records work in the Malaysian civil services. This is the group of civil service officers in the various Federal Ministries and departments. In addition to their core responsibilities, they are also assigned the responsibility to be in charge of managing departmental records.

In the Malaysian civil service administrative structure, there is no specific post officially termed as the Departmental Records Officer, unlike the case of the civil service in the UK. However, in recognition of their peripheral duties, they are also known as Departmental Records Officers in keeping with the name of the post as given in General Administrative Order no. 1/1997. In fact, they hold the post of general administrative officer under the Administrative and Diplomatic Services scheme or Administrative and Support scheme in their respective agencies. They consist of the Middle level (M48) and Junior level (M41) officers. Apart from their official tasks as administrators, they also act as departmental records managers and as liaison officers who are in constant communication with the National Archives in keeping with the provisions of the General Administrative Order No. 1/1997 which outlined their responsibility for the transfer of departmental records of archival value to the National Archives.

6. Conclusion

This chapter was devoted to identifying and setting the parameters for the study. It includes statement of the problem; aims and objectives of the study; underlying assumptions, as well as research questions and how they are operationalised. It also includes an overview of the civil service structure in Malaysia that is pertinent to an understanding of records management in Malaysia as a whole from a structural point of view. The role of administrators, archivists, IT personnel and records managers as the key players in ERM within the context of this structure was also analysed.

CHAPTER THREE

REVIEW OF RELATED LITERATURE

This chapter is a literature review on education and training in enabling the different groups of record keepers (defined in this study) to manage electronic records. It begins with the characteristics and content of the literature review, providing an initial analysis of the subject. It then highlights the development of policies, strategies, guidelines and procedures on ERM for record keepers to perform their roles and responsibilities which formed the basic requirement for education and training on the subject. This is followed by the various professional competency profile standards which define and codify the types of knowledge and skills on ERM as guidelines for education and training contents. It also deals with the outcome of research into electronic records, as this has implications for adopting new approaches to teaching ERM. Literature suggesting the need for education and training on ERM is also discussed. This chapter ends with education and training for record practitioners through ICA initiatives and education and training worldwide, including that in Malaysia. The insights thus obtained helped base decisions regarding the focus of this study.

1. Introduction

According to Cooper (1984) there are six characteristics of literature reviews consisting of focus, goals, perspective, coverage, organisation and audience which help frame the enquiry for the literature review. An extensive review on electronic records was conducted with the objective of locating all the literature on education and training of the record keepers defined in this study. This review is organised according to themes which are reflected by the types of activities and research conducted to date on education and training of record keepers in the discipline of records, archives and information, which is also the audience for the literature review. Figure 3.1 illustrates the characteristics of this study based on that of Cooper (1984).

Figure 3.1. The nature of this literature review based on characteristics identified by Cooper (1984).

Characteristics defined by Cooper	Characteristics of literature review of this study
Focus: defines the material that is of central interest to the researcher.	Education and training for different groups of record keepers consisting of administrators, archivists, records managers and IT personnel.
Goals: determines what the researcher hopes the review will accomplish.	Providing an initial analysis on this subject and to establish justification for the need of education and training on ERM for the different groups of record keepers.
Perspective: the point of view the researcher takes, either neutral or advocacy position.	Neutral
Coverage: the extent to which the researcher locates and includes relevant works in the literature review.	Extensive review not only on literature pertaining to education and training of the different groups of record keepers but also activities, programmes and research associated with knowledge and competence necessary for the record keepers to perform their roles and responsibilities on electronic records.
Organisation: how the paper is arranged, either in a historic, conceptual/thematic, or methodological manner, or in some combination thereof.	Combination of the historic and thematic approaches. The historic relates to the ICA activities, whereas the thematic approach is adopted in dealing with the activities, programmes and research (generally on ERM and specifically on education and training for the record keepers in electronic environment).
Audience: defines the intended group for the literature review.	Examiners and government record practitioners including that of administrators and IT personnel and fellow researchers.

A variety of strategies were utilised to provide a comprehensive focus on electronic records and also specifically on education and training of record professionals. Databases relating to UMI, Masters' Abstracts, Dissertation Abstracts, Education Abstracts and LISA were searched. Professional journals, specifically those focusing on education and training of records professionals, were also searched. In addition, proceedings from both conferences and meetings were examined. The websites of the various national and international archival institutions, as well as those of related professional organisations were browsed in order to seek out the most current information

on ERM programmes and activities. Relevant information and studies were categorised and the findings were synthesised and summarised.

The literature on electronic records activities, programmes, research and suggestions that are related to the requirements of record keepers knowledge and skills to manage these records can be categorised into eight fairly distinct areas: development of policies, strategies, guidelines and procedures for record keepers; record management standards; professional competency profile standards; research on electronic records; suggestions on the need for education and training on ERM; training for record keepers in the activities of the International Council on Archives (ICA); education and training on ERM world wide; and education and training of record keepers in the Malaysian civil service.

2. Development of policies, strategies, guidelines and procedures on ERM for record keepers.

Literature by practising records professionals from the perspective of Australia, Canada, European Union member countries, the UK and the USA widely notes the importance of ERM.

Conferences held in the 1980s were characterised by their common devotion to the subject of electronic records, in North America and throughout the world (Association of Canadian Archivist, 1987; Cook, 1987; Durrance, 1989; Cox, 1994; European Communities 1996 & 1999). It was in the 1990s that the national and international organisations began to examine the necessity for establishing policies, standards and procedures on ERM following the increasing need for qualified control tools to guide creator's activity in electronic recordkeeping (Pigliapoco, 1996).

McLeod, Hare & Johare (2004) point out that in recent years, a great deal has been written and much progress made in terms of research and development of practical guidelines to support records professionals as well as systems designers and records creators/users in managing the records they handle during their normal working days. To date countries like Australia, Canada, European Union member states, the UK and the

USA have developed policies, guidelines and procedures for record keepers to manage electronic records of governments in their respective countries.

The National Archives of Australia for example is perhaps the leading organisation in the world in terms of policy and practical guidelines in the field of ERM in particular their work within the *e-permanence* programme (http://www.naa.gov.au/recordkeeping [05-July-2003]). An extensive practical guide to virtually all aspects of recordkeeping is contained in the Australian Archives Handbook. This includes guidance on the methodology of designing and implementing recordkeeping system as provided in the toolkit *DIRKS: A Strategic Approach to Managing Business Information.* These and other excellent resources, including *Managing Electronic Records: A Shared Responsibility and Keeping Electronic Records* are available on the Australian Archives web page.

The Canadian National Archives' initiatives on electronic records started in 1980s upon completion of projects called FOREMOST and IMOSA (Information Management and Office Systems Assessment project). According to McDonald (1995) these two projects set the stage for the development of the National Archives *Guidelines on the Management of Electronic Records in the Electronic Work Environment* (EWE). These include guidelines on the recordkeeping functional requirements aimed at providing record keepers in the Federal Government institutions with practical generic guidance that helps them deal with electronic records. These guidance is published on the National Archives website (http://www.archives.ca [10-January-2002]) which also includes the guidelines *Records/Documents/Information Management: Integrated Document Management System (RDIMS) for the Government of Canada – Requirements.*

In the UK, the National Archives for England and Wales developed the (Electronic Records from Office Systems) EROS project and have a host of guidance on their website (http://www.thenationalarchives.gov.uk/recordsmanagement [01-April-2003]). The EROS guidelines are primarily intended for government business managers, Departmental Records Officers (DROs), heads of IT, strategy and planning managers, project managers and the UK National Archives inspection and documentation officers.

Following a review of its activities and assessment of its priorities, the Records Management Department of the National Archives is placing a stronger focus on supporting and encouraging the development of expertise within government records management. In particular this includes the education and training of key players in the UK government agencies.

The ERM agenda and initiative of USA National Archives and Records Administration (NARA) falls under the Electronic Records Archives (ERA) programme. Policy and guidelines for the record keepers in the USA government include guidance for agencies implementing technologies, an institutional guides on ERM, guidelines for appraisal of electronic records, design criteria standard for ERM software application DoD 5015, 2-STD and NARA's Fast Track Guidance. In response to requirements stated in the U.S Government Paperwork Elimination Act (GPE), NARA issued a document entitled "Records Management Guidance for Agencies Implementing Electronic Technologies" dated October 18, 2000 for record keepers in the government (http://www.archives.gov [19-March-2002]).

Some institutions have developed computer applications for preserving potentially complex electronic records. These include CONSTANCE at the National Archives of France, AERIC at NARA, ERICSON at the National Archives of Canada, and similar systems in Sweden, the United Kingdom and elsewhere. The European member states have, collectively through the DLM-Forum, also developed a reference model for managing electronic documents and records in public administration (MoReq) (http://europa.eu.int/ISPO/dlm/flm99/result_en.html [28 February 2003]). This has been utilised by the record keepers in Europe and other parts of the world as a best practice model.

In a global context, the ICA (International Council on Archives) has developed a *Guide to Managing Electronic Records* published in CIA Etude 8 1997 prepared by the ICA Committee on Electronic Records (ICA, 1997). This guide was designed to assist records keepers in archival institutions address the management of electronic records. It

contains a brief section on the necessity of education and training for records professionals, especially archivists, on the preservation of electronic records.

3. Research on electronic records

Two of the most significant research projects on ERM were the American NHPC's Pittsburg Project and the Canadian British Columbia University (UBC) InterPARES (International Research on Permanent Authentic Records in Electronic Systems) project on electronic records.

Hedstrom (1996) reported that one unanticipated use of the Pittsburg project on electronic records functional requirements is their role in teaching and professional development of the record professionals. Teaching staff used the functional requirements in courses on ERM as a conceptual framework and point of departure for evaluating policy, design, implementation and standards for electronic recordkeeping systems. In this case the functional requirements offer a methodology for analysing and designing systems that can be conveyed to students and practitioners. This represents a significant advance over previous approaches to teaching which tended to emphasise problems rather than possible solutions; procedures for data archiving, and reproduction of institutional practices rather than application and customisation of general models and methods.

Comparatively the InterPARES project at UBC was consciously designed to include significant support for doctoral education and research. Students who were involved in the project were handpicked on the basis of their diverse disciplinary expertise and research skills. The project is providing the students with extensive learning, research and teaching, while preparing doctoral students for careers in archival research (Hedstrom, 1996).

In the UK, the Joint Information Services Committee (JISC) of the Higher Education Funding Councils (HEFC) has already stated its commitment to supporting records management as an essential prerequisite for enabling the effective preservation of digital resources within Higher Education (HE) and Further Education (FE) community through

JISC Digital Preservation Strategy. In supporting institutional records management, in 2003 JISC funded a project at Northumbria University to develop an ERM training package for all staff in HE and FE, including for records professionals, senior management/executives and system specialists/administrators. One of the main objectives of the training package is to create a self-instructional and modular training programme for electronic records management in HE and FE taking categories of stakeholders from ISO 15489, the international records management standard which provides a best practice framework (Hare, 2003).

4. Records management standards

ISO 15489 was published in 2001 and is the first ever international standard on records management. For the first time records practitioners have a recognised standard to provide a benchmark for professional best-practice on records management including that of electronic records. Perhaps the most important message in the standard is that records are an important resource and asset for an organisation and therefore they need to be consciously and systematically managed. The standard outlines the elements that are required for good records management – appropriate policy, assigned responsibility, understanding of the environment and records management principles, design and implementation of records systems, use of processes to support records systems, monitoring and training. At the core of the standard is a process for design and implementation of the records system (Dan, 2002). The total approach of ISO 15489 is to support record keepers in making decisions about how records are created, captured, controlled and kept at any stage, including design of records systems.

5. Professional competency profile standards

The competency profiles define and codify the skills and knowledge requirements in a given industry or field of endeavour. According to Lamberti (2004), competency profile standards are generally seen as one of the best means of promoting best practice among employee in an organisation. Thus because of the increasingly technical nature of electronic recordkeeping environments, the development of competency profile

standards is inevitable in order to ensure operability, best practice, professional competence and education and training contents.

In recordkeeping, there are several competency standards and profiles that have been developed such as the *Australian Records and Archives Competency Standards 1997.* They were developed in response to the challenge of the electronic media, and are widely used by records professionals in Australia. The National Archives of Canada has also published an *Information and Records Management Competency Profiles* model in April 2000 which was used as an evolving tool in the recruitment of existing and future record keepers. The UK National Archives has also developed and published *Human Resources Competence Framework in Records Management* in 1999. The IRMT *Competency Profiles* were developed in 1999 as part of Managing Electronic Records module of the MPSR programmes.

These competency profiles requirements suggest the kind of knowledge and skills that must be acquired by the records professionals in electronic environment. The content strands could be used as reference material in developing curricula for the initial and continuous education and training for the records professionals to manage electronic records based on the competency requirements, skills and knowledge could be transferred to the record keepers through innovative curricula for the initial and continuous education and training as suggested by (Kampffmeyer et.al, 2003) (Laeven, 2000).

From the educational perspective Pember (1998) asserts that the competency standards provide the foundation for a consistent national system of education, training and certification and open the education and training field to others outside the traditional providers. Education and training gained from an accredited provider such as in Australia, Canada, UK and US are recognized nationally ensuring portability of skills acquired. As suggested in the literature, professional associations in these countries have already indicated that course recognition link closely to competency standards.

6. Literature suggesting the need for education and training on ERM

6.1 *The purpose of education and training on electronic records*

Kandur (1992) wrote that, as a result of the changing nature of records due to use of IT in information work, the national archival institutions, institutions of higher learning and professional organisations have been attempting to develop better education and training on ERM.

Similarly, Millar (1998) suggested that there has been an increased emphasis on the education and training of archivists due to their changing work practices related to the handling of electronic records. The archivists' work performance on electronic records have a direct impact on the preservation of electronic records over time. The goal of improving the performance of the archivists as one of the record keepers defined in this study is to create education and training that serve the purpose of providing the archivists knowledge and skill on electronic records so that they can improve their job performance. Fredrikson (2002), Katuu (2003) and Menne-Haritz (2003) suggested that archivists must be equipped with knowledge and skills pertaining to professional techniques of preservation and providing access for electronic archives.

Mariani (1999) listed four reasons for designing a suitable education and training programme for the archivists and administrators: "(a) to improve job performance in electronic environment, (b) to identify specific professional development to increase needs, (c) to have a better grasp of technical matters related to the handling of electronic records, (d) to facilitate vocational training on ERM. On the other hand McDonald (1998a) argued that administrative demands for accountability has led to the need for the development of education and training that should be focused on the records practitioner's ability to manage electronic records to ensure their integrity, reliability and authenticity. In Tyacke's (1999) term education and training of public administrators, modern archivists and other information specialists serve the following purposes: improving performance, enhancing knowledge and skills, preserving materials in electronic format, and effectively delivering these materials to the public.

Pederson (1996) reported that the purpose of the University of New South Wales' records management programme is to promote recordkeeping professional and personal growth and development. According to the ICA Committee on Electronic Records (1997), education and training on electronic records should be used to support and enhance the professional growth of archivists as preservers of the nation's memory.

According to Turner (2003), the purpose of education and training on electronic records is twofold. Firstly, it serves to provide knowledge and skills on job performance. Second, it can be used to develop competency and improve job performance. On the other hand, Laeven (1999b) listed the following objectives of the Five Day Seminar Cycle (FDSC), an electronic records education and training programme designed by the Netherlands Archives School for senior records managers and archivists in the public sector.

(a) to support the shift from the traditional role of the records managers and archivists to a new role; and

(b) to promote the development of a new pedagogical concept.

Laeven added that education and training on electronic records is intended to develop the records manager and archivist into a specialist who is engaged, from the earliest possible moment, in defending the interests of recordkeeping and archiving in the company of information, organisation and IT specialists, who are generally not concerned with records. King (1996) listed two types of education and training for records management practitioners: (a) continuing vocational education (CVE) to learn new skills and techniques in records work processes, and (b) focused records management education and training at the managerial as well as other levels within the organisation.

Ngulube (2001) listed strategies that should be utilized by records educators when designing education and training on records management: (a) the development of guidelines and standards that suit the indigenous environment, and (b) the use of standards to enable learners to be portable as well as being able to compete in the global economy.

Thomassen (2001) suggests for the modeling and re-modelling of archival education and training and calls upon the international community of records practitioners and professionals to develop appropriate strategies, procedures and standards. Katuu (2003) suggests that within the strategies, procedures and standards, the education and training strategies should be given priority to ensure that the people responsible for the record keeping infrastructure have the requisite knowledge, skills and ability to manage these records. The knowledge, skills and ability identified by the European Commission DLM Forum as constituting 'core competence' are to be transferred into effective working practices (Tyacke,1999). This could be achieved through suitable education and training on electronic records for those who are concerned with these records.

The purpose of education and training on electronic records is two fold, namely to provide for knowledge and skills and to make room for professional growth. The first purpose is to provide the records practitioners with the knowledge and competencies that need to be developed so that they can discharge their new roles other than their traditional role in managing conventional records. The second purpose is to provide opportunity for professional growth which is deemed necessary because of their changing roles and responsibilities. As suggested, combining these two purposes will help make education and training on electronic records a meaningful process.

6.2 *Individuals who need education and training on electronic records*

The second consideration found in the review of literature involved individuals who need education and training on ERM. It was interesting to observe the change that occurred in the 1990s regarding the recommendations made in the literature about who should be educated and trained in relation to electronic records.

Review of the literature on education and training on records management before the 1990s found that the only consistent recommendation was that the records managers and archivists be solely responsible for the management of records, in which the records managers were responsible for managing current and semi-current records of their organisations, and archivists were responsible for managing records of permanent value.

Thus education and training programmes were aimed at fulfilling the knowledge and skills required by the records managers and archivists for the management of their records in paper format and other conventional formats such as microform and audiovisual. That recommended practice contrasted sharply with the writings that developed over the remainder of the decade. Notably there are many others who are impacted by the use of IT in every organisation as computerisation has made the nature of information management and recordkeeping more complex.

The complex management of electronic records now relies on IT, and it needs to be integrated into the business processes of organisations. As a result, electronic records management not only requires the involvement of traditional key players in record keeping such as records managers and archivists, but also IT personnel and administrators to share the roles and responsibilities of establishing a credible electronic records management programme. Therefore it is of the utmost necessity for IT personnel and the administrators to be educated and trained on ERM. The present literature on electronic records includes some critical statements on the records managers' and archivists' lack of knowledge, skills and abilities in managing electronic records, and the need for re-education and re-training (Hoffman 1996, Erlandsson 1997, Shepherd 1999, Johare 2001, Katuu 2003, Menne-Haritz 2003, Turner 2003, Hare 2003, McLeod et al 2004).

Katuu's (2003) analysis of education and training of record practitioners in African countries suggests that most of the Archives are not thoroughly equipped to function in the modern information era, as electronic records require individuals knowledgeable in archival practice and theory, and with have a specialized knowledge of computers and related technology. He has even proposed standard education and training for government records practitioners to be developed for the African countries.

Similarly, MacKenzie (1999a) argues that reforms in work practices call for skills, and require records managers and archivists to have a firm grasp of electronic recordkeeping

so that they can carry out their responsibilities effectively and in accordance with standard practices.

The need for archivists as keepers of evidence to have in-depth knowledge of electronic records is evident in the statement made at the DLM Forum 1999 in Brussels (Mariani, 1999). It reveals a strong pressure in support of multidisciplinary approaches and possibilities for cooperation between administrators, records managers, archivists and IT personnel/specialists, who should work together to create and implement electronic recordkeeping systems which support the business processes of organisations (MacFarlane 1996; and Hoffman 1996).

Hoffman (1996) argues that the cooperation between the administrators, records managers, archivists and IT personnel within the IT policies will be possible when these record keepers share common ideas about electronic record keeping. They will thereby be able to cooperate in putting IT policies, which incorporate records management and preservation requirements, into practice. Where as the National Archives of Malaysia survey findings in 2002 recommended that top management, IT management and record managers in government organisations need to cooperate in framing IT policies that will enable records management requirements to be incorporated into all IT strategies and system requirements across the public sector (McDonald, 2003).

Hoffman (1996) further suggested that this cooperation needs a framework within which the administrators, records managers, archivists and IT personnel meet each other at the conception stage in order to implement their different requirements for the information systems. The most efficient way to make record keepers understand these issues of meeting at the conception stage and of designing an information system, is to tell these key players what their obligations are and to help them meet these obligations. In this context, there is a strong link between training and the implementation of these obligations. Hoffman concludes by suggesting an integrated, multidisciplinary approach in which priority should be given to education and training of the key players mentioned

above concerning electronic records and strategies to be followed and the importance of building partnership between the various key players and stakeholders.

The argument in favour of building partnerships and working together is also advanced by Granstrom (1996). He notes that records managers and archivists must work closely with IT personnel such as data administrators and system designers, as the latter are responsible for designing, implementing and maintaining systems which include system data creation and data transformation. They also design data dictionaries as tools to hold documentation relevant to archival requirements such as appraisal criteria, provenance data, contextual information, audit trail, access restriction, etc. In order to conform to requirements for the creation, capture and maintenance of records, information technology managers and IT personnel must have clear understanding of the concepts and principles involving records management, as they are the experts within the government who can advise on how technology can be used to support electronic recordkeeping requirements. Hare (2003) and McLeod, Hare & Johare (2004) agree that common understanding between record keepers on electronic records is crucial for the development of credible electronic records programme across government. However the record keepers in question must first of all understand their roles and responsibilities.

The ISO standard for records management (ISO 15489, 2001) spells out the range of roles and responsibilities that need to be "defined and assigned, and promulgated through out the organization so that, where a specific need to create and capture records is identified, it should be clear who is responsible for taking the necessary actions". Therefore, in addition to everyone in the institution as individuals having to take responsibility for records management, the groups identified as having particular roles and responsibilities include records management professionals, senior managers and executives and systems specialists/administrators. These are the key players defined by the writers as record keepers who need education and training in ERM (discussed in Chapter Two) as each of these categories has its own combination of responsibilities but some are shared (Hare, 2003).

The literature has clearly indicated a desire to have the key players other than the records managers and archivists to be educated and trained on electronic records. Considerable suggestions have been made of the critical need for IT personnel and administrators to be involved in the creation and maintenance of electronic records and building partnerships between these key players emerged as an important issue.

7. Education and training for record keepers through initiatives of the International Council on Archives (ICA)

The review of the literature relating to education and training of record keepers necessarily delves into general writings about educating archivists within the framework of ICA initiatives. At the 1972 Moscow Congress, the professional training of archivists was written into the ICA Constitution. As a result, joint ICA/UNESCO/UNDP projects were successfully implemented with the establishment of regional schools for archivists in Senegal, Ghana, Sudan and Spain (Cook, 1973). Even though there were plans to set up many more regional archives schools in South America (Buenos Aires), Asia (including Sri Lanka and Malaysia) and the Pacific, Evans (1986) reported that these plans failed to materialise due to lack of support from the respective governments, as the archival profession was not strongly established in those regions.

In 1979, ICA created the Committee on Professional Training which was commissioned to study problems relating to the training of the various categories of archives personnel, planning and organisation of training and curricula, as well as production of teaching materials. About the same time, ICA Regional Branches in member countries were also assigned the responsibilities to get involved with the training of archives staff (Delmas, 1979). Up to this point the literature does not seem to suggest any ICA initiatives pertaining to the education and training of records managers since the focus was on training the archivists, librarians and documentalists on traditional archives management as part of archival development in the member countries. As suggested by Evans (1982) such focus has resulted from the planned harmonisation of archival education programmes. The ICA had responded to proposal to initiate unified training of archivists, librarians and information specialists. Fundamental to this approach is the belief that

archives, librarianship and information constitute three categories of the same discipline. This concept was adopted by ICA in common with FID and IFLA. Initially, such an approach received widespread acclaim and was widely quoted in subsequent studies on education programmes for archivists (Franz, 1982; Evans, 1982a; Evans, 1986; William & Franz, 1974; Cook, 1979; and Delmas, 1979). Soon the harmonisation theories were criticised for being too traditional in content, limited in scope, too rigid and irrelevant to the environment in which they operated. Subsequently serious revisions were made to library schools curricula; and the harmonisation concept came to an end and such collaboration was never repeated (Evans, 1986).

In the light of technological developments which are transforming the office environment, traditional training on paper records is no longer adequate for the preparation of records specialists who need to acquire new knowledge and skills to manage electronic records. It was only when the issue of electronic records became significant in the 1980s that the ICAs initiatives shifted from archival development to records management. Thus, guidelines were published not only for archival staff but also for those involved in electronic records. This is evident where the problem of curricula for special areas of training on electronic records then popularly known as machine readable records was tackled in the Records and Archives Management Programmes (RAMP) Studies, a UNESCO programme. In this context, model curricula for the training of specialists in document preservation and restoration (by Y.P. Kathpalia) and for the education and training of archivists in automation (by M.H. Fishbein) were launched in 1984/85 (Evans, 1986). The RAMP publications were followed by guidelines on curriculum development in information technology for librarians, documentalists and archivists by Michael Cook in 1986 (Evans, 1986).

The creation of the new ICA Section for Archival Education and Training (ICA/SAE), which was formally constituted at the Montreal Congress in 1992 marked a new start for ICA in the training field (Janus, 1992). The first significant conference for education and training for record keepers in relation to ERM is the one held in September 1992 in

conjunction with the XII ICA Congress in Montreal on the theme "The Profession of the Archivist in the Information Age" (http://www.ica.org/static.php?ptextid=congres&plang ue=eng [15 June 2005]. The latest effort on archival education and training was the convening of the European Conference for Archival Educators and Trainers in Marburg in September 2001 (http://www.ica-sae.org [15 May 2004]. This represents the first of a series of conferences (in different parts of the world) organised by the ICA Section on Archival Education and Training for records and archival educators and trainers. The aim was to put forth ideas on how best to provide education and training that are suitable for modern record keepers.

Even though the ICA/SAE have been organising some 15 conferences and meetings on archival training since 1988 (1988 in Paris, 1989 in Milan, 1990 in the Hague, 1991 in Beijing, 1992 in Montreal, 1993 in Piraeus, 1994 in Ljublijana, 1995 in Austin, 1996 in Beijing, 1998 in Slamanca, 2000 in Seville, 2001 in Marburg, in 2002 in Perth, in 2003 in Harnosand and in 2004 in Beijing), only the later four conferences addressed the issue of education and training of archivists for the management of electronic records (http://www.ica-sae.org [12 May 2005]. However, current issues on education and training of other key players such as administrators, records managers and IT personnel were not the concern of these conferences as the focus was on archival education and training for archivists (http://www.ica-sae.org [12-May-2004).

Therefore the literature up to this point strongly suggests that ICA's activities on education and training were very much focused and narrowed only to the archivists' professional development with limited facilities for the education and training of other record keepers defined in this study.

8. Education and Training on electronic records world wide

Yusof & Chells' (1998) survey on the worldwide approaches to education and training in records management reveals the lack of standardised course syllabi in universities worldwide. Most existing records and information management courses and programmes are found in colleges of business and in schools of library and information science. Many

of these programmes provide practical internship experiences in addition to classroom instruction. Increasingly, courses are becoming available – on an international basis-via the World Wide Web, for example, are being offered by universities around the world.

The most recent and comprehensive survey on education and training on records and archives is the ICA/SAE survey published in August 2002. Even though only 65 institutions from 23 countries worldwide responded to the survey, the work reveals the latest situation pertaining to education and training on records and archives inclusive of electronic records as explained below. The ICA/SAE survey findings as explained below have been published in the Directory of Archival Education and Training Institutions (http://www.ica-sae.org [23 March 2004]).

8.1 *Education and training on electronic records in developed countries*

Academic institutions of higher learning have played a significant role in delivering educational and training programmes on ERM in developed countries such as Australia, Canada, Europe, UK and US. ERM initiatives within the records management programmes in higher education in those countries have taken a variety of forms: accredited programmes, flexible modular programmes and distance learning; as well as traditional face to face classroom teaching which remains the common mode of delivery.

In Australia, education and training on ERM was established on a strong belief that records staff act as internal consultants, educators and advisors who assist agencies to meet their recordkeeping roles and responsibilities in the era of EG, public accountability, freedom of information and knowledge-based organisations aimed at supporting ISO 15489. Education and training on ERM is provided by Curtin University of Technology, Edith Cowan University, Monash University and University of New South Wales within their existing records and information management courses.

Presently in Canada records management courses have evolved with great energy, enthusiasm and creativity, in line with the dynamism of dealing with electronic records. Other than embarking on the harmonisation of education and training in records

management, librarianship and information sciences as part of the philosophy which characterises the records management education and training in Canada, the development of research into ERM is another significant component of the philosophy behind the programmes offered by the various universities. The InterPARES project based in UBC brings together archivists from universities and archival institutions, along with computer and information scientists and engineers from around the world in a concerted effort to define the archival requirements for authenticity on the basis of archival science and diplomatics. Other than integrating the research findings into existing curricular frameworks, researchers of the project developed and pilot tested continuing education and training products such as workshops, distance education courses, annotated bibliographies, glossaries, and potentially also case studies on ERM that were made available for use by academic programmes and professional associations and institutions in their continuing education programming. Issues on electronic records have also led to the introduction of specific modules on ERM at the University of Montreal and University of Toronto.

In the UK, ERM subjects are incorporated within accredited courses on archives at the University of London (UCL), Liverpool University (LU) and University of Wales (UWA) for their certificate, diploma and masters post graduate programmes. By comparison, Northumbria University (NU) has remained the first and to date the only UK school to teach records management from the perspective of information rather than archives management. It has thereby developed strong areas of concentration and specialisation on ERM in their MSc Records Management by Distance Learning and Advanced Diploma in Records Management Lifelong Learning. The subjects focus on organisational recordkeeping as practiced in different situations, with electronic record keeping constituting the main core knowledge on ERM. The subjects seek to deliver the knowledge and understanding required by those intending or already in employment as records managers and to do it in a manner that, where possible, corresponds to the electronic environment.

NU with LU and the UK National Archives have also established the rm3 program, a flexible and modular Diploma and Certificate in Professional Studies: Records and Information Management which include modules on ERM. This partnership offers a unique collaboration and the first of its kind in the UK which provides an educational opportunity for the various record keepers across government to develop their records management expertise and to acquire a university accredited qualification. In addition NU has also developed a joint programme with AIIM - Information Management University (IMU) - to provide training on ERM for different types of clients in the UK (http://www.aiim.org.uk/imu/imuniversity.asp-18- [14 June 2005]. The serious initiatives have put NU at the forefront of ERM educational and training development.

NU has also designed and developed records management education and training programmes for different levels of staff in other organisations. This includes operational administrative staff to strategic managers, in, for example Irish universities and the British Broadcasting Corporation (BBC), records professionals on the MSc Records Management (by distance learning), all practitioners at either tactical or management level, and a combination of three key stakeholders groups i.e IT, administration and archives and records management in the European Leonardo funded project, e-TERM (Education and Training in Electronic Records Management). These programmes have used different pedagogic models including face to face workshops, directed study, distance learning and the use of e-learning environment (Hare, 2003).

There are also several other examples of education and training providers on ERM in Europe. In contrast with the development in other parts of Europe, the present education programmes in universities in Bulgaria such as Sofia University and South Western University offer ERM subjects as part of archives and records management courses in their diploma, degree and PhD in History. On the other hand the Bavarian Archives School and the Marburg Archives School in Germany are offering courses for the various civil service career levels of staff employed by the archives administration inclusive of subjects on ERM in their diploma and degree courses on archival science. The structure of the programmes have been developed in cooperation with professional archival

organisations. Similarly, the Mid Sweden University and University of Tampere in Finland have also developed programmes specialising in records management, but with concentration on electronic recordkeeping in modern organisations.

In the USA, only two universities offering courses on electronic recordkeeping and digital preservation responded to the ICA/SAE survey. In this case both the University of Michigan and University of California offered ERM as separate modules. The Schools of Information in the respective universities offer an integrated, multi-disciplinary degree (Master of Science in Information) with an optional specialisation on ERM. Distinguishing features of their programmes include emphasis on modern records and modern technology inclusive of electronic recordkeeping, digitisation, and on-line access systems.

Other than academic courses provided by the various universities, there are also training courses provided by the universities and other organisations to provide competence and skills for the record keepers to manage electronic records as part of their professional development. The various universities in Australia, Canada, Europe, UK and USA run regular training courses on ERM for their existing government record keepers. For example, UCL in the UK runs a summer school and short courses in archives and records management inclusive of specific topics on ERM to meet the needs of a variety of clients and in response to major developments, for example the impact of new legislation such as the Freedom of Information (FOI) Act and the development of ISO 15489.

Early records managers and archivists in the national archives received on-the-job training to learn how to set up records programmes for the government. This has also largely remained true for current records management professionals in the National Archives and in many state archives. In a number of countries, archival institutions organise their own education and training programmes for the benefit not only of archivists and records managers, but also civil servants in general for whom a knowledge in this area is of vital importance in ensuring an orderly and efficient office administration.

Apart from the universities and archival institutions, professional bodies such as the society of archivists and other professional organisations of record managers, have also developed training opportunities on ERM in the various countries. For example in the UK, the Society of Archivists and the Archive-Skills Consultancy deliver in-service training to people working as records practitioners at all levels without formal qualifications (www.archives.org.uk [07 December 2003]). Training specialisation featured include managing digital records and electronic recordkeeping.

In the USA and Canada, the central records management association, ARMA, have also been active in promoting education and training on ERM as part of records management programmes. ARMA with over 10,000 members and over 100 local chapters, is active in promoting educational efforts through conferences, workshops, and continuing education programmes [www.arma.org (30-November-2003)]. As suggested by Bennett (1999), excellent opportunities were also provided by related organisations such as the Association of Information and Image Management (AIIM), the Society of American Archivists (SAA), the American Society for Information Sciences (ASIS), the Nuclear Information and Records Management Association (NIRMA), the National Association of Government Archivists and Records Administrators (NAGARA), and the American Health Information Management Association (AHIMA).

8.2 Education and training of record keepers in Asia

In many countries of Asia, including South East Asia, education and training provided by the various universities is characterised by the traditional focus on archival management with emphasis on conventional records management. According to the response received by the ICA, only four out of the 23 institutions in China offering records and archives programmes also offer subjects on ERM. They are Zhejiang University, Beijing Union University, Soochow University and the Zhengzhou Institute of Aeronautical Industry Management. These four universities offer subjects on electronic recordkeeping through their school of archives, library and information science. By comparison none of the archival schools in Japan namely the National Institute of Japanese Literature and the National Archives are offering ERM subjects.

This is due to the fact that their area of specialisation limits their role to the management of historical manuscripts.

There is little evidence of concern for education and training of record keepers in managing electronic records in India. Even though the National Archives of India has been providing education and training for archivists from within and outside the country since 1943, the curriculum content remains traditional in approach due to the lack of local expertise and facilities to deliver education and training programmes on ERM (www.nationalarchives.nic.in/diploma.html [09 July 2003]).

There are several universities in Indonesia providing instructions in records and archives, such as the University of Indonesia in Jakarta, University of Deponegoro in Semarang and University of Hassanuddin in Ujung Pandang (www.ui.ac.id [07 March 2004]) (www.fib.ui.ac.id [15 December 2002]) (www.deponegoro.ac.id [18 June 2001]). In addition the National Archives of Indonesia runs in-service training for government records managers and archivists. However the existing educational programmes are limited to diploma courses in archival management emphasising conventional records management. Apart from the local education and training programmes, it is current practice to send experienced archivists abroad for advanced training in specialised areas such as ERM and the preservation of information (www.arkib.gov.my/sarbica [03 January 2004]). They are being sent to countries like Australia, Canada, the USA and the Netherlands. The aim is to train specialists and also to improve the local education and training programmes on ERM (www.indosat.net.id [27 August 2003]).

In other Southeast Asian countries such as Burma, Brunei, the Philippines, Thailand, and Vietnam, education and training programmes in the area under study are mainly for archivists in general. The literature reveals that there are no organised, and formal training programme on ERM for archivists. Whatever training there is, has been sporadic and irregular, mostly in the form of on-the-job training (www.arkib.gov.my/sarbica [03 January 2004]). Some members of the archives staff were sent to the National Archives

of Australia, Canada, UK and the USA (NARA), for short courses and attachment on ERM.

In Singapore, the Nanyang Technological University has developed a post graduate programme on information management emphasising ERM at the Masters level in the School of Communication and Information (www.ntu.edu.sg [15 February 2004]). The MSc (Information Studies) programme offered by the University for both part time and full time students aims at training graduates in any discipline into a new breed of information services and systems professionals who are able to develop and deliver value-added information products and services in all types of information environment. The course is inter-disciplinary and draws upon the fields of library and information science, information management and computer technology. The broad range of subjects offered ensures ample opportunities for students to tailor the curriculum to suit their particular requirements or to specialise in one of five areas of concentration namely, Library and Information Science, Archival Informatics, School Media Resource Management, Information Management and Information Systems. Although there is no clear mention of record management, it is obvious that records managers might need to adopt the overall skills to their particular requirements (www.ntu.edu.sg/sci/is [15 February 2004]).

8.3 *Education and training of record keepers in Malaysia*

In Malaysia records and archives education and training is being provided by the Faculty of Information Management of the Universiti Technologi MARA (UiTM), the only institute of higher learning in the country offering such academic programme. The Faculty has undergone changes from time to time in tandem with employment prospects of the country. Currently, the records and archives courses are aimed at preparing the next generation of information managers who are needed to advance both the country's information policies in relation to IT, as well as the EG. ERM is being offered as a separate module in the diploma, degree and Masters programmes as qualified records and information managers are required for the successful implementation of the EG. However, the faculty is experiencing lack of experienced academic staff to deliver ERM

subjects, and lack of facilities prevents the development of research initiatives in this area of concern (www.uitm.edu.my [20 January 2005]).

The National Archives of Malaysia has remained the only provider of records and archival training for the government records practitioners including those from the third world countries in Africa and South East Asia. However existing training programmes provided by the National Archives, as in other Southeast Asian countries are limited to the management and the preservation of conventional records. Due to the lack of local expertise, experience and facilities to run courses on ERM, government archivists and records managers currently are sent abroad to acquire education and training on ERM (McDonald, 2003). Foreign experts on ERM were also brought in to deliver and conduct in-service training such as workshops, seminars and conferences by the National Archives as part of the e-SPARK project. One of the project's aim and objective is to develop guidelines for the training of records managers and archivists (www.arkib.gov.my [30 May 2005]).

Other professional organisations, namely the Malaysian Institute of Management and the Library Association of Malaysia have also initiated programmes that require the use of foreign expertise in providing training on ERM for their respective members (Yusof & Chell, 1998), (www.mim.edu [07 May 2005]), (www.pnm.my/ppm [07 May 2005]). This situation implies that there is awareness of the need for education and training among record practitioners expected to assist the government to realise the EG initiative.

Literature reveals that at present the Malaysian record keepers in the Administrative and Diplomatic Services (ADS), Administrative and Support Services (ASS), Social Services (SS) (including the archivists and records managers) and Information System Services (ISS) receive their in-service education and training at the National Institute of Public Administration (INTAN) (www.windowstomalaysia.com.my/gov/31_1_2.htm [29-January-2003]). For the archivists this training is supplemented by specialist training overseas. See Figure 3.2 for detail.

This variety of education and training indicates that the ADS, ASS, SS and the ISS do not receive any education and training on records management although training for the ITS do cover information and knowledge management. This also suggests the possibility of offering INTAN the model to be developed in this research.

Figure 3.2. Variation of education and training provided by INTAN.

Record keepers	**Types of existing education and training received by the record keepers**
ADS	Premier leadership, management, budget management, public policy, economic development, strategic planning, Electronic Government, international relation and other subjects related to higher level management and policy of the public sector policy.
ASS	Leadership, management, human resource management, Electronic Government, quality management, communications development, urban and environmental development and other subjects related to their administrative jobs.
SS	Leadership, management, human resource management, Electronic Government, quality management, communication development, urban and environmental development and other subjects related to their administrative jobs.
ISS	Technical support and multimedia, project management, Electronic Government, ICT management, knowledge management, information system management, information management and other areas of ICT related to their technical job.

Source: http:www.windowstomalaysia.com.my/gov/31_1_2.htm [29 January 2005].

The literature suggests that the archivists at the National Archives acquired their professional education and training in records and archives management at the local and overseas universities and archival institutions. Currently the information in Figure 3.2 indicates that none of them acquire the requisite knowledge and skills in the management of electronic records.

Figure 3.3 indicates that 38 archivists at the National Archives acquired professional knowledge from local and overseas universities and archival institutions, while another 29 junior archivists are waiting to be sent for their professional education and training (National Archives of Malaysia Archivists Training List 2004-unpublished).

Archivists at all levels of management require education and training in order to obtain professional skills and knowledge, and also for the purpose of enhancing their promotional prospects.

Figure 3.3. Variation of education and training acquired by the archivists at the National Archives of Malaysia.

Number of archivists	Subject content	Place of education and training	Level of education and training
7	Overseas Records and Archives Management	University College London.	Masters
7	Information studies/management	University College London, University of New South Wales, INTAN and University Technology MARA (UiTM).	Diploma and Masters
20	Archives management	National Archives of India.	Diploma
4	Electronic records management	National Archives of Australia, Canada and UK.	Visits and short periods of attachment

Source: National Archives Archivists training list 2004 (unpublished).

Education and training for the records manager as suggested by the literature review showed that training for these groups of personnel is often provided by annual courses sponsored and organised by the Training and Carrier Development Division of the National Archives of Malaysia or a specialised records management course sponsored and organised by the respective departments conducted by local and international records management consultants. However the training continues to emphasise the management and the preservation of conventional records (National Archives training programmes for the public sector, 2004 (unpublished).

In Malaysia, this matter has to be given serious attention, as archivists and records practitioners have to be equal to the responsibilities arising from the implementation of EG. At the same time, records created by the legacy systems are still not addressed. The

question is whether the education and training that the professional archivists at the National Archives of Malaysia have so far acquired is adequate to meet the challenges.

A survey was carried out in 2003 by the e-SPARK project team, to assess the state of knowledge and skills of the staff across the public sector and the National Archives of Malaysia pertaining to ERM. The survey found that "the staff in the agencies and in the National Archives have yet to acquire the knowledge, skills and abilities required to undertake the job". The survey also found that "the awareness and understanding of the importance of electronic records among public servants is lacking thus hindering efforts to promulgate ERM strategies" (McDonald, 2003).

9. Conclusion

The literature examining all aspects of ERM originates from the many present research projects on ERM and from the development of policies, guidelines, standards and the implementation of ERM by the leading advocates of all aspects of ERM in Australia, European Union member states, Canada, UK and USA. These policies, strategies and standards are used as model guidelines and procedures for the record keepers in managing records in the electronic environment.

In advanced countries, initiatives on education and training for records practitioners and other key players on ERM are provided by the universities, professional organisations, private consultants and individual archival institutions, or through collaboration between the various organisations. However, evidence from the review of literature suggests that in many countries especially those in Asia, the present situation is characterised by a lack of local expertise, experience and facilities. As a result records practitioners are sent to developed countries to acquire knowledge and competency on ERM or foreign experts are brought in to conduct in-service training for government record keepers.

Several examples of education and training programmes developed in Europe and UK for administrators, records managers, archivists and IT personnel, to acquire knowledge

and skills on ERM together under a common program, have been identified. These are the rm3 programme in the UK, e-TERM, the FDSC and the IMU training programme.

The review of related literature elaborates the main line of arguments of this study. Literature on ERM supports the notion that for the successful implementation of any ERM system or ERM program, the knowledge and skills of administrators, archivists, IT personnel and records managers as key players in recordkeeping is vital. These key players need to have thorough grounding in the subject matter of ERM before they are able to fulfill their new roles and responsibilities.

The literature supports the view that common understanding among electronic record keepers based on education and training is crucial to developing a credible records management programme across the government. This means education and training should provide the platform for partnership building between the various record keepers under a common education and training program. If this is the case, for many record keepers, these needs entail a significant amount of relearning, and this cannot be achieved through the kinds of in-service training methods now used, most often in Malaysia and in other countries in Asia, as the changes in work practices demand deeper understanding of electronic recordkeeping as suggested in the literature review.

The writer concludes that within the context of this study, for the Malaysian government to implement the EG programmes within its administrative structure and machinery, there is an urgent need to develop guidelines on education and training tailored to the needs of the administrators, records managers, archivists and the IT personnel within the ADS, ASS, SS and ISS schemes of services. This education and training may provide a useful forum that will lead to building of partnerships and establishing shared responsibility for electronic records in and across the Malaysian Government.

CHAPTER FOUR

METHODOLOGY AND METHODS

This chapter explains the methodology chosen for the research, highlights several general theories, and describes the course of the process. It also presents the description of methodology employed in the ERM research and explains in detail the methodology and method applied for this study. This is to achieve the aim of this chapter firstly to justify the research method employed and how it works differently from other research on ERM and secondly, to examine the data collection and analysis techniques undertaken in every phase of the study and thirdly, describes the strength and limitations associated with the methodology and methods used.

1. Introduction

Patton (2002) regards methodology as the paradigm and the philosophical frameworks underpinning research. Wildermuth (1993), Ingham (1984), Hirschheim (1985), Grover & Fowler (1993), Layder (1993) and Merriam (1998) agree that the methodology employed within a project emerges from the nature of the research questions. However, methodology, although a general and conceptual term, also includes the question of method which refers to the actual process of data collection.

Cohen et al (2000) describe methods as being those sets of techniques and procedures which can be harnessed in the data-gathering process in educational research and be used as a touchstone for references and interpretations, for explanations and predictions. According to Yin (1989) methods are the tools whereby data and information pertaining to the problem under investigation are gathered and analysed. On the other hand, Maykut & Morehouse (1994) suggest that a study which derives its subject from human experience, as this work does, is of a qualitative nature and demands the use of associated techniques.

The works on research strategy and methodology consulted by the writer include those of Gorman & Clayton (1997), Hernon (1991) and Glazier & Powell (1992). These works discuss the development of qualitative research in the light of the complexity of societies

and organisations characterised by the impact of information technology as an agent for both local and global change in the 1990s. Researchers and practitioners in information organisations, whether libraries, archives, records management centres or any other types of information service providers are urged to be aware of and have access to the variety of research methodologies and means of analysis that researchers in other disciplines are employing.

Other works such as by Salkind (1997), Yin (1989), Patton (1990), Lincoln & Guba (1985), Silverman (2000), Mellon (1990) and Layder (1993) were also explored. These works consider the rationale for qualitative research, its relationship to quantitative methods, and techniques applicable to social research. They address specific techniques and focus on actual studies of non experimental descriptive research that utilise the qualitative strategy.

These suggestions are enhanced by the works on educational research such as by Cohen & Manion (1994) and Preece (1994). Other works on social research such as by Babbie (1995), Brewer & Hunter (1989), DePoy & Gitlin (1993), Krueger (1994), Mason (1998) Morgan (1998), Oppenheim (1996) and Robson (1998) have guided the writer in carrying this study. But what strategy and methodology was most appropriate for this study? The following discussion helps provide the answers.

2. Methods used in past studies on records management

In the 1980s and early 1990s, the literature suggests that academic research in the field of records management adopted survey as their research strategy with questionnaire, interview and visits as methods for data collection. There were hardly any study employing the formulation of theory and model building (Danbury, 1999).

However in recent years there has been significant progress and development pertaining to research in records management. The literature suggests that there is a shift in research focus from that concerning paper-based records to related research on the impact of IT on records and archives. Organisations and professionals concerned are moving towards

finding solutions to the challenges posed by electronic records. Theory and model building are beginning to form a product of investigative inquiry into electronic records (Pederson, 2001). A host of themes and products of academic research and collaborative research into ERM are likely to emerge.

2.1 *Academic research related to ERM*

Kandur's PhD research entitled *The Management of Electronic Records* (1992) was an initial mark of transition to research on electronic records. By examining the literature on the life cycle concept of electronic records, Kandur's work remains theoretical in nature because he relied heavily on literature review in his methods of data collection and analysis. This work is more exploratory than definitive because of the lack of in-depth investigation into the subject, and absence of hard data to support his argument.

In the late 1990s, MacNeil (1998) explored the evolution of methods of assessing the trustworthiness of records as evidence from antiquity to the digital age, from the perspectives of law and history and based on a contemporary adaptation of diplomatics. Attached to the UBC project, MacNeil's work was the first academic research aimed at building a theoretical framework in the area of ERM. It sought to discover a technical solution for the creation and preservation of authentic and reliable records over time. Descriptive in methodology, this work was based on an analysis of the historical and legal evolution of the diplomatic concept. Even though it proved to be a remarkable departure from the previous academic work in terms of its aims and findings, it remains theoretical and continues to be tested for its benefits for research (MacNeil, 1998).

The research method of Turner's Ph.D study (*Theory and practice in the analysis of information policy in the digital age: a case study on the formulation of the European directive on the legal protection of databases*) departs from that of Kandur and McNeil in that he adopts a qualitative approach as research strategy and draws data from face to face interviews (Turner, 1999).

A significant progress on methodology employed in the academic research on ERM has been the work of Khan (1999) on the effect of technological innovation on organisational structure. It looks at a managerial issue facing many organisations today and how organisations changed their organisational structures in response to the growing use of electronic records in place of traditional print media. The research methodology involved a qualitative inductive approach using a cross-case in-depth study analysis with data from face to face interviews.

Walker's (2002) study adds a new dimension to academic research when she aimed to introduce records managers to the world of Intelligent Agents (IAs) with literature review and questionnaire as methods of data collection.

2.2 *Collaborative research on ERM*

The sharp rise in the national and international collaborative research and development activities on ERM and archives reveals the development and progress on strategy and methodology adopted in this area of investigation.

The National Archives of Canada's IMOSA (Information Management and Office Systems Advancement) project in 1992 and FOREMOST (Formal Records Management for Office Systems Technologies) employed survey questionnaire and interviews to find out the needs of the Canadian government agencies of office information (McDonald, 1995).

Due to the complex nature of electronic records, the UBC DoD project (1994-1997), University of Pittsburg and University of New York (1997), InterPARES (1996 – 2006) Public Records Office Victoria, Australia VERS project (1997), Monash University, Australia SPIRT recordkeeping metadata research project (1998-1999) all employed a complex and triangulation research methodology. In these cases, approaches such as theoretical-deductive, hypothesis testing, empirical-inductive, grounded theory using theoretical sampling and case studies on recordkeeping systems were used. Survey

questionnaire and in-depth face to face interviews were adopted as data collection techniques (http://www.interpares.org/ip2_summary.htm [04-July-2003]).

In the UK, the Joint Information Services Committee (JISC) of the Higher Education Funding Councils funded a number of research projects on digital archiving in collaboration with the National Preservation Office NPO. Five JISC/NPO projects which were administered by the British Library Research and Innovation Centre aimed at finding a solution for long term preservation of digital materials. These projects as reported by Bennet (1997), Haynes et al (1997), Hendley (1998), Beagrie & Greenstein (1998) and Ross & Gow (1998) employed case studies on data types and formats in order to identify the most appropriate method of preservation. Contextual data was derived from survey questionnaire and in-depth interviews.

3. Development of research methodology of this study

In order to achieve the aims and objectives of the study, this study was divided into five phases. The research questions that emerged from the five phases, helped the writer in making her decision on the methodology and the methods to be used. The research questions appeared in every phase of the study is tabulated in Figure 4.2. The types of data collected in each phase may be stated as follows:

Phase 1:

- what are the international education and training programmes for record keepers to manage electronic records?
- where were these programmes developed?
- who developed these programmes?
- how many programmes are there?

Phase 2:

- how were the international education and training programmes for record keepers to manage electronic records developed?
- why and how were they developed?

Phase 3:

- how was a model for education and training for record keepers to manage electronic records developed?
- why was it developed?

Phase 4:

- what are the roles and responsibilities of the Malaysian central government's record keepers?
- do they have sufficient knowledge and skill to manage electronic records?
- how should they be provided with the knowledge and skill?

Phase 5:

- is the model of education and training for ERM developed in Phase 3 suitable for the Malaysian record keepers?
- if not how can the model be made suitable?

The form of the research questions helped to determine qualitative or case study research as the strategy of the existing project. Yin's (1994) illustration in Figure 4.1 suggests the relevance of qualitative research methods including 'survey' and 'case study' strategies used for this particular work.

Figure 4.1. Relevant situations for different research strategies

Strategy (Data gathering methods)	form of research question	requires control over behavioral events	focuses on contemporary events	strategy of the existing study
Experiment	how, why	Yes	Yes	No
Survey	who, what, where, how many, how much	No	Yes	Yes
archival analysis	who, what, where, how many, how much	No	Yes/no	No
History	how, why	No	No	No
Case study	how, why	No	Yes	Yes

3.1 *The nature of the case study*

The term "case study" has been defined in a variety of ways. As observed by Lincoln & Guba (1985) and Merriam (1998), there is no common understanding of what constitutes a case study. In conducting qualitative research, Yin (1994) suggests that the type of questions asked will determine the kind of research strategy that must be adopted. According to him, a case study approach is appropriate for investigating "how" questions. In seeking an answer, the researcher does not try to influence or to control behavioural events. The subject studied is a contemporary and real-life phenomenon.

According to Hammersley (1989) case study involves "the collection and presentation of detailed, relatively unstructured information from a range of sources about a particular individual, group or institution, usually including the accounts of subjects themselves". Allison (1996) defines case studies as "in-depth studies of particular events, circumstances or situations which offer the prospect of revealing understandings of a kind that might escape broader surveys". In the case of this study, the concern is with studying a particular problem and the solutions in relation to a specific group or related groups. In the case of this study, the Malaysian record keepers in the Federal Ministries constitute the "group" of interest. This group represents the "case". According to Yin (1994), a case study may be based on a combination of quantitative and qualitative evidence.

Figure 4.2. The types of data collected in relation to the research questions, aims and objectives

Project	research question	types of data needed	Purpose/aim/objective	data collection technique
Phase 1 Looking for international education and training programmes for ERM	"what" international programmes are available? "where" were they developed? "who" developed these programmes? "how many" programmes?	quantitative	to provide broad answers to questions	survey questionnaire of national governments and professional organizations.
Phase 2 Analysis of international education and training	"how" were they developed? "why" were they developed?	Qualitative	to give in-depth understanding to questions	case study based on face to face interview with those involved.

programmes (pragmatic examples)				
Phase 3 Developing framework model of international best practice model education and training for record keepers to manage electronic records	"how" to develop? "why" is it developed?	Qualitative	to give in-depth understanding to questions	document analysis.
Phase 4 Investigating the roles and responsibilities of record keepers in the Malaysian federal ministries	"what" are their roles and responsibilities? "who" are they? "how many" doing what?	Quantitative	to give broad answer to questions	survey questionnaire across 24 ministries and the National Archives of Malaysia.
	"why" do they manage electronic records the way they do? "how" to provide them with the requisite knowledge and skills in ERM?	Qualitative	to give in-depth understanding to questions	case study based on face to face interview with different record keepers in the Prime Minister's Department and the National Archives of Malaysia.
Phase 5 The development of a model on ERM education and training for Malaysian record keepers.	is the model developed in Phase 3 suitable for the Malaysian record keepers? If not how can the model be made suitable?	Qualitative	to give in-depth understanding to questions	case study based on focus group discussions with the different record keepers.

The emergence of quantitative and qualitative data in response to the nature of the research questions and content areas under study shown in Figure 4.2 gives the writer an opportunity to integrate the various approaches to data collection and analysis through the triangulation method.

4. Triangulation Method

Denzin (1997) identifies four types of triangulation: *Data source triangulation*, when the researcher looks for the data to remain the same in different contexts; *Investigator triangulation*, when several investigators examine the same phenomena; *Theory triangulation*, when investigators with different view points interpret the same result; and *Methodological triangulation*, when one approach is followed by another, to increase confidence in the interpretation.

In this study quantitative and qualitative data were collected from four different sources : survey questionnaire, in-depth face to face interviews, focus group discussions and

document analysis. Denzin (1997), Cohan & Manion (1994), DePoy & Gitlin (1993), Mason (1998) and Robson (1998) also call this methodological triangulation whereby different methods are used to collect different types of data. "The aim was to pick triangulation sources that have different biases and strengths, so that they complemented each other" (Miles & Huberman, 1984). In this case the need for triangulation arose from the research questions and thus fulfilling the ethical need to confirm the validity of the processes.

Methodological triangulation was considered appropriate for the study as it permitted a constructive blend of a primary qualitative oriented approach with a few, albeit important quantitative elements, with a view to providing a more holistic understanding, but also to verifying and, thus enhancing the credibility of the research outcomes.

Finally, another reason as to why triangulation was adopted for this study is related to the arguments that relying exclusively on one research strategy, could potentially bias the researcher's perception, limit and perhaps distort the understanding of the phenomenon under study. "This becomes even more dangerous when the research object is not only so complex and multi-faceted, but also minimally explored previously" (Cohen & Manion, 1994) as in the case of education and training of record keepers in the EG context.

4.1 *Population and sample of the study*

Nachmias & Nachmias (1993) and Salkind (1997) define the population in a given study as all the cases the research intends to gain information from whereas the sample according to them is a selection from the population.

4.1.1 *Population*

Wildemuth (1993) suggests that "the process of determining the population in a given study is fairly straightforward, as in many instances, as the research questions provide strong clues to it." Broadly, with reference to the objectives and questions of this study, the population addressed is divided into three broad populations: the population of leading advocates on electronic records (Australia, Canada, Europe, UK and USA), the

population in Malaysia and UK. The population in Australia, Canada, Europe, UK and USA embraces the national archival organisations and the prominent state archives and that of professional organisations of administrators, records, archives, information management and information technology. In Malaysia the population consists of administrators, records managers and IT personnel from 24 Federal Ministries as well as archivists from the National Archives of Malaysia. On the other hand the population in the UK consists of personnel responsible for the design and delivery of the pragmatic examples of education and training programmes for electronic records in UK and Europe.

4.1.2 *The sample*

Nachmias & Nachmias (1993) and Salkind (1997) define the sample as a subset or a group drawn out of the total population. The knowledge and information to be gained are representative of the total population under study. Hence the sample has to be representative of the total population in such a way that the information elicited represents the information about the whole population. This is the case with the fourth phase of the study whereby the whole population of 67 archivists was used.

4.2 *In search of sampling strategy*

The method of securing a representative sample is critical in any research study because the essential requirement of any sample is that it must be as representative as possible of the population from which it is drawn and to which it is desired to generalise if need be. But generalising is not a major priority of this study, as this is a case study.

There are two types of sampling in modern sampling theory, the probability and non-probability sampling as outlined by many writers on social research. According to Kruskal et. al (quoted in Yin, 1984), in probability sampling each unit has equal probability of being included in the sample. In non-probability sampling, there is no way of specifying the probability of each unit's inclusion in the sample, and there is no assurance that every unit has some chance of being included. According to Kruskal et. al (quoted in Yin, 1984), if a set of units has no chance of being included in the sample, a

restriction on the definition of the population is implied; that is, if the traits of this set of units are unknown, then the precise nature of the population also remains unknown.

Lincoln & Guba (1985) explain a type of non-probability sampling, i.e. a purposive sampling (or judgment sampling) which is based on informational, not statistical considerations. Its purpose is to maximise data, not facilitate generalisation, specifically in order to learn more about the issues at the heart of the inquiry. The sample may, for example, have been selected on the basis of its relevance to particular aims and objectives.

In conclusion the following issues were considered in deciding the sampling strategy employed for this study:

a. the wider population in phase one and phase four of the study is very large and it was impossible to include the entire population as a sample (Nachmias & Nachmias (1993); and
b. the quantity of both quantitative and qualitative data collected from the samples needed to be valid and verifiable to serve as the foundation on which to construct the framework model for education and training in ERM.

Guided by the literature, the writer decided to use the purposive sampling method for data collection in every phase of the study. Using this sampling method, the writer selected a "typical group" of organisations (in Phase 1) and individuals (in Phase 2, 4 and 5) who represented the larger population and then planned the data collection. Due to the writer's individual judgment and that of respondents in selecting the sample, there may be suggestion that it could have introduced bias, as the selection process was not random. In defining the target audience (or "typical" group), the writer was reliant on logic and judgment, in keeping with the research aims and objectives. The logic and judgment was based on literature review.

4.3 *Sampling process*

Several sampling strategies suggested by the literature review were adopted to meet the aims and objectives of the study. Figure 4.3 shows how the sampling process took place.

4.3.1 *Sample size for survey in Phase 1*

The national governments or national archival institutions as purposive samples were chosen as respondents due to the fact that these national central agencies performed organisational, legal, regulatory, professional and other requirements that apply to the management of any public records inclusive of electronic records created by the government agencies in their respective countries. These organisational functions include that of providing guidelines such as education and training for the government staff to manage the nation's records.

Figure 4.3. Sampling strategies used in this study.

Sampling stage	Strategy	Main justification(s)
Selection of national archival institutions and professional associations of archives, administrators, records, information management and information technology in Australia, Canada, Europe and UK.	Purposive sampling	To reduce problems of large population and to permit sampling of national archival institutions and related professional associations to achieve the aims and objectives of the study.
Selection of 24 Malaysian Federal Ministries	Purposive sampling	To reduce problems of large population and to permit sampling of three different groups of record keepers at the ministerial level only.
Selection of administrators, records managers and IT personnel within each of the 24 Malaysian Federal Ministries.	Purposive sampling	To include different types of informants which were defined in this study.
Selection of the National Archives of Malaysia	Purposive sampling	Necessity to permit purposive sampling of archivists as record keepers who reside only in the National Archives within the Federal Government administrative structure.
Selection of the archivists in the National Archives of Malaysia	The whole population	To include all archivists because population is small.
Selection of the Prime Minister's Department of Malaysia	Purposive sampling	To permit purposive sampling of record keepers, as the Prime Minister's Department is responsible for the policy and implementation of EG in the Federal Government.

Selection of administrator, IT personnel and record manager in the Prime Minister's Department.of Malaysia	Purposive sampling	To permit purposive sampling of different types of record keepers (administrators, records managers and IT personnel) in the Prime Minister's Department responsible for the policy and implementation of EG in the Federal Government.
Selection of informants for pragmatic examples education and training for record keepers on ERM.in Europe and UK	Purposive sampling	To include those informants who were involved in developing and delivering pragmatic examples of education and training programmes.
Selection of focus groups from the Malaysian Federal Ministries	Purposive sampling	To include different types of informants/record keepers which were defined in this study.

The professional organisations associated with administrators, records, archives, information management and information technology were chosen as respondents because they are closely associated with the professional development of their respective members, i.e. the record keepers defined in this study. In this context the education and training in managing electronic records was thought to be provided by the professional organisations for their respective members.

In the two surveys in Phase 1 of the study, the writer used the purposive sampling method because it was impossible for the researcher to include in the survey the entire gamet of national archives and professional organisations in more than 190 nations across the world, a time consuming and costly endeavour which would not contribute to fulfilling the primary objectives of the first phase of the study.

The national archival institutions and the professional organisations in Australia, Canada, Europe, UK and USA as suggested in the literature review were purposively chosen for sampling for several reasons. Firstly with regards to electronic records management, the literature suggests that the work carried out by the aforementioned organisations has been substantial in the past one decade. Secondly, they constitute leading advocates for developing, establishing and providing authoritative guidance on all aspects of electronic records management. Thirdly, the organisations are all leading advocates from different countries around the world, thereby offering a wider perspective of electronic records management. Finally, while similar organisations of many countries produced many

policies and guidelines regarding the management of electronic records, those of the sampling countries addressed the whole functionality of electronic records management systems (Walker, 2002).

The national archives and professional organisations defined in this study in Australia, Canada, Europe, UK and USA are the primary source of leadership in the archival and information profession; they work within a broader and better defined policy environment; they exemplify best practice in the records, archives and information management field; they portray the overall trends in the records, archives and information profession; they represent the professional vision, mission, values, issues and concerns; and they have long held positions of leadership within the records, archival and informational profession. Thus the purposive sample was used due to informational rather than statistical considerations. Its purpose was to maximise information and not to facilitate generalisations as explained by Patton (2002) and Salkind (1997).

24 archival institutions and 20 professional organisations of records, archives, administrators, information management and information technology in Australia, Canada, Europe, UK and USA were selected as survey sample in the first phase of the study.

4.3.2 *Sample size for in-depth interview in Phase 2*

The second phase of the research needed an in-depth case study of pragmatic examples of education and training programmes for the record keepers to manage electronic records which were identified through the responses in the survey in the first phase of the study. The findings of Phase 1 were used as inputs for the face to face semi-structured interview. A conversation with a purpose as suggested by Oppenheim (2000) was employed as a data collection technique and therefore data need to be collected from those people who were involved in developing the pragmatic examples of education and training of record keepers "based on the assumption that the perspective of these people is meaningful and able to be made explicit by the subject under investigation" (Patton, 2002). The purposive sampling method was used in selecting three people in UK who

were involved in the pragmatic examples of education and training for in-depth interviews.

4.3.3 *Sample size for Phase 3*

This phase did not require any sampling as the objective was to develop a model of education and training for record keepers to manage electronic records. Data from the first phase and second phase of the study provided inputs for this particular phase.

4.3.4 *Sample size for Phase 4*

A purposive sampling strategy was also used for the population of record keepers (administrators, records managers and IT personnel) in the 24 Federal Ministries, as well as the archivists in the National Archives of Malaysia for the survey and the in-depth case study. The archivists as the fourth group of the record keepers were surveyed separately because they are from the National Archives, a Federal Government department.

For the survey, a sampling frame was used to arrive at the most satisfactory situation for designing a sample as suggested by Nachmias & Nachmias (1993). One member of IT personnel, one administrator and one records manager were chosen as purposive samples representing their respective population in each Ministry. The IT personnel and the administrators were selected because of their position as heads of their respective departments at the Ministerial level, and their designated responsibilities for record keeping. For the records managers, sampling was based on those who were appointed as officers responsible for the management of departmental records in accordance with the General Circular Letter No. 1/1997.

This sample selection was appropriate because of the judgment that representation of the population is adequate due to the position of the respondents within the hierarchical administrative structure at the ministerial level. They are within the policy making units and directly in charge of the administrative/transactional functions, the IT functions and the records management functions. They also translate the various national policies into plans, programmes and projects in accordance with national aspirations and objectives.

Thus the formulation of policy guidelines for the implementation and management, together with operational responsibility for programmes and projects pertaining to electronic records comes from the respondents chosen for this survey and in-depth case study.

The status of ERM and the knowledge and skills of the entire population of the record keepers in the 24 Ministries should be reflected by the samples of record keepers chosen for this survey and case study. To justify the basis for the writer's assumption, it is assumed that every Ministry and also department regardless of their primary functions requires similar electronic records management principles, as well as and concepts and education and training for their record keepers.

The Federal Executive List in each of the Ministry's Human Resource Department was used as sampling frame to identify and select the samples. A total of 24 administrators, 24 records managers and 24 IT personnel were selected as samples representing the record keepers population in the 24 Malaysian Federal Ministries.

The survey at the National Archives involved the entire population of archivists since there were only 67 of them holding the post which is classified under the closed services scheme (not transferable elsewhere in the public services) when the survey was conducted in January 2002. The archivists at the National Archives are responsible for the policy and programmes for the management and preservation of the nation's records inclusive of electronic records as well as for the management of their own records and electronic records which are generated while discharging their administrative functions.

To verify the qualitative data from the survey, in-depth interviews were also conducted with the record keepers in the National Archives and the Prime Minister's Department. The National Archives was chosen because of its legitimate roles and responsibility over the preservation for posterity of public records of the Malaysian Government. On the other hand, the Prime Minister's Department plays the lead role in all the key decision-making for the entire nation in all aspects of administration including records

management (Department of Information Services Malaysia, 2003). This central agency prescribes and respects the best model of administration for all Ministries departments, and agencies at all levels of the Malaysian Government to emulate and follow. It lays down policies and procedures that are binding at all levels of government. This is done in the interest of enhancing administrative modernisation and efficiency. This being the case, the Prime Minister's Department is a microcosm of the situation within the larger administrative system of the government as a whole. The management and administration of records in the government departments also represents a part of the area inspected for the award of ISO 9000 for which MAMPU, a unit under the Prime Minister's Department, is solely responsible (Department of Information Services Malaysia, 2003). It is therefore reasonable to expect that the system practices by the Prime Minister's Department reflects the larger scenario of management principles and procedures in all areas of government administration, including recordkeeping.

As suggested by Patton (1990) and Oppenheim (2000), purposive sampling was used, with those who were involved in the formulation and implementation of the policy on electronic records in the Malaysian Government inclusive of education and training aspects. Six archivists were selected as a sample from the National Archives and four record keepers from the Prime Minister's Department. The number was decided on the basis of the actual numbers of relevant respondents in a position of authority.

4.3.5 *Sampling size for Phase 5*

Data in this phase was gathered by focus group discussions. It was determined that each focus group should consist solely of administrators, records managers, IT personnel or archivists and the last group embracing one representative of each group. As suggested by Krueger (1994), purposive sampling was adopted for the focus group discussion because the aim of focus groups is not to infer but to understand, not to generalise but to determine the range, not to make statements about the population but to provide insights about how people perceive a situation. Even though random sampling was not used to control the sampling selection, a sampling frame was used. In this case the survey questionnaire returns in Phase 4 served as a sampling frame where participants in Phase 4

had the opportunity to participate in the focus group discussions in Phase 5 of the study. The samples were identified through the survey in Phase 4 of the study whereby a question pertaining to the respondents' willingness to participate further in the study was indicated. For the focus group discussions 12 archivists from the National Archives indicated their willingness to participate, four administrators agreed to further participation, six records managers gave positive indication and three IT personnel agreed to participate.

4.4 *Sampling frame*

Once the population for the first and the fourth phase of the study had been defined, a sample was drawn based on the purposive sampling method.

A sampling frame was used as suggested by Nachmias & Nachmias (1993). For the national governments the sampling frame used to identify the National Archives was the list of the ICA member countries in category A as the target population. Since an ideal sampling frame that includes all sampling units in the population as suggested by Nachmias & Naschmias (1993) and Salkind (1997) rarely exists in practice, an equivalent list was substituted. In this case for the professional organisations various weblists were used as sampling frames to arrive at the most satisfactory samples. The Federal Executive List in each of the Malaysian Ministry's Human Resources Department was used as a sampling frame to identify and select the record keepers samples. A similar list was used also to identify the whole population of the archivists in the National Archives of Malaysia.

Prior to the selection of the above samples, the sampling frame has to be evaluated for potential problems. Kish (quoted in Yin, 1984) provides a useful classification of typical problems in sampling frames: *incomplete sampling frames, clusters of elements, and blank foreign elements.* In the selection of sampling frames, this study has considered these three elements of the problems that might arise while dealing with the sampling frame of the national governments, the professional organisations, the record keepers

across the 24 Malaysian Federal Ministries and the archivists in the National Archives of Malaysia.

Incomplete Frames. As suggested by Kish (quoted in Yin, 1984) the problem of incomplete sampling frames occurs when sampling units included in the population are missing from the list. For example there might be new countries joining the ICA. To counter check the reliability of the sampling frame in time of the study, the researcher communicated with the ICA Secretariat to confirm if there were new countries that should be added to the sample frame. This ensured the completeness of the sampling frame for the national governments. Similar counter checks were also carried out with the other samples in this study.

Clusters of Elements. The second potential problem of a sampling frame as pointed out by Kish (quoted in Yin, 1984) is clusters of elements. This problem occurs when sampling units are listed in clusters rather than individually. This is true in the case of the sampling frame of professional organisations which consists of groupings or sample blocks of organisations according to administrators, records, archives, information management and information technology, whereas the study focuses on individual organisations. To provide a possible solution to this problem as suggested by Kish (quoted in Yin, 1984), a sample of blocks or groupings of the population was examined closely and all the individual orgnisations in each of the selected blocks of professional organisation was listed down. The selection of individuals from each professional organisation was based on prespecified criteria, such as those belonging to professional organisations in their capacity as administrators, or as experts in the area of records, archives, information management and information technology.

Blank Foreign Elements. As suggested by Kish (quoted in Yin, 1984) the problem of blank foreign elements is quite common and occurs when the sampling units of the sampling frame are not included in the original population. This is often a problem when the listing used as a frame is outdated. To counter this problem, the researcher used the

latest ICA member country lists, the latest lists of the professional organisations, and the latest Federal Executive List of the Malaysian Government.

5. Research instruments used for data collection

The aim of data collection was to obtain raw material for the construction of a scenario of the need for education and training of Malaysian record keepers to manage electronic records; and the construction of a generic education and training model for record keepers; and the testing thereof in the Malaysian public sector. Therefore research instruments were needed to collect the raw data as a major source of evidence to achieve the aims and objectives of this study.

Research instruments refer to "the sets of techniques used in social research for the purpose of gathering data which will underpin inferences and interpretations, predictions and explanations" (Cohen et al., 2000). The instruments are the means by which we can obtain the data in order to meet the aims and objectives of the study.

Questionnaires, interviews, documentary analysis and focus group discussions were the main instruments chosen and used in the collection of data for this study. In addition the writer's experience as well as field notes (informal conversation) were used to a limited extent. This helped in gaining greater insight of the subject under investigation and helped to enrich the discussions. These instruments, their characteristics, advantages, disadvantages, and how they were employed within the context of this study are discussed in the following sections.

5.1 *Questionnaires*

Oppenheim (2000) explains "a questionnaire is a scientific instrument for measurement and collection of particular kind of data. They are commonly used by researchers to convert into data the information directly obtained from a person. Information or data is obtained by asking instead of observing behaviour." "Survey results were used to explore and measure the beliefs and knowledge of the target population" (Salkind, 1997).

Nachmias & Nachmias (1993), Salkind (1997) and Bell (1999) argue that the geographical widespread population of a study necessitates the use of questionnaire as one of the instrument for data collection. The following points underpinned the choice of the questionnaire as a research instrument for Phase 1 and Phase 4 of this specific study:

a. Acceptability to the respondents (national archival institutions, professional organisations and the Malaysian records keepers) in this study (Robson, 1998 and Bell, 1999);
b. Piloting of the questionnaire which provided strong clues to its use (Black, 1999 and Oppenheim, 2000).

In line with the diversity of the population and as dictated by the research questions as suggested by Yin (1994), questionnaires were developed for the following contexts:

a. national archival institutions and the professional organisations in the first phase of the study;
b. administrators, records managers and IT personnel in 24 Federal Ministries in Malaysia in the fourth phase of the study; and
c. archivists in the National Archives of Malaysia in the fourth phase of the study.

There are several types of questionnaires which are broadly stated by Cohen et al (2000): structured, semi-structured and unstructured. As suggested by Robson (1998) and Oppenheim (2000) the highly structured self-completion questionnaire which is most widely used type was chosen to answer some of the research questions posed in this study. The detail of the design of each type of the questionnaires used in this study is discussed below.

5.1.1 *Questionnaire for national archival institutions and professional associations in Phase 1*

Black (1999) argues that the design of written questionnaires, interviews questions and observation schedules requires much planning and consideration.

The process of planning and designing the questionnaire for the national archival institutions and professional organisations in Australia, Canada, Europe, UK and USA passed through several stages of refining and scrutinising. Two core issues were kept in mind throughout the process of planning and designing. Firstly the use of this instrument was not an aim in itself but a means to elicit a range of responses that were representative; and secondly the aims and objectives of the study were fulfilled and consequently the research questions answered (Bell, 1999; Cohen et. al., 2000)

At the preliminary stage of design, a funneling approach (Nachmias & Nachmias, 1993; Oppenheim, 2000) for the main theme of this study was employed. For this purpose, several sources were referred to in order to identify actual items to be included in the questionnaire:

a. a thorough analysis of the national archival institutions' activities and interest on education and training of record keepers in managing electronic records based on the literature review;
b. a comprehensive review of the literature pertaining to education and training programmes of record keepers; and
c. the previous studies conducted in the field of electronic records and education and training of record practitioners and key players in government environment.

To produce the actual instruments and as part of ensuring their validity (Black, 1999, 2002) it was necessary at this preliminary stage to note down all the information and knowledge gathered through the aforementioned sources. Following this, the actual questions pertaining to each of the concepts were written. Statements in the introductory notes were used to explain the various concepts and terms (Oppenheim, 2000). The adoption of the up-down funneling approach was to ensure, as stated by Cohen et al (2000), that the questionnaire was clear on its purpose; was clear on what needed to be included or covered; was exhaustive in its coverage; asked the most appropriate kinds of question; and elicited the most appropriate kinds of data to answer the research purposes.

The design of the questionnaires was informed by previous research done by ACCIS (1990), Hanigan (1996), NAPA (1989) and Schurer (1999) concerning the management of electronic records and education and training of records practitioners. However, modifications were made to meet the objectives of this study. The questionnaire addressed five main content areas which were important to the goals of the survey in the first phase and which gave a context within the larger framework of the research studies (refer to Appendix 1 and 2).

The features of the questionnaire were in the form of multiple choice and ticking of boxes and the reasons behind the layout of the questionnaire design were:

a. wider range of answers permitted to respondents that allowed for achieving larger reliability (Nachmias & Nachmias, 1993);
b. the need in this study to obtain detailed information in term of the respondents answers on the topic under investigation;
c. the need for exploration of the views and opinions entailed by the research questions (Oppenheim, 2000); and
d. the need to encourage people to respond thereby increasing the response rate as suggested by Robson (1998).

5.1.1.1 *Computer-assisted data collection: a web-based questionnaire*

The study faced an initial challenge of constructing a survey method enabling one to work with the various archival and professional organisations situated all in Australia, Canada, Europe, UK and USA. Initially, a pilot testing of an e-mail survey in the form of a flat text file was carried out. These were sent to the National Archives of Malaysia, National Archives of Thailand, National Archives of Brunei Darussalam, and the National Archives of Indonesia. The feedback was disheartening. It was found that this tool was not suitable to collect qualitative data. After several pilot tests with friends at the same National Archives and advice from the director of study and supervisor, a web-based survey was chosen, because it allowed for surveys to be administered by issuing an invitation to complete a survey on the respondents' web site.

Foley & Schuck (1998) suggest that current literature supports that web-based surveys are gaining popularity and also acknowledging that e-mail is a large, integral part of business communications systems. Even though previous research has reported many advantages of web-based surveys such as speed and candid response, there are also ethical issues to be considered. These are: limitation of sampling representativeness, need for confidentiality safeguards due to lack of respondent anonymity, and the need for responsible quotation due to casual language responses. These issues were considered by the writer prior to selection of this instrument as an appropriate data collection tool.

Geocities web-based interactive questionnaires were developed for both surveys and the URL addresses of the questionnaires was sent through e-mail addresses of the respondents' organisations. These are:http://www.geocities.com/rusnahjohare/Survey_Prof.htm (see Appendix 1) and http://www.geocities.com/rusnahjohare/Survey_Archives.htm (Appendix 2). An advantage of the web-based tool is that it is posted immediately to the recipients, and the responses come back in "real time" when they responded quickly. There is no worry about postal delays nor about the costs of stationery and postage, and difficulties involved in handing dispatching bulky materials. This is enhanced by the fact that the target audience for the survey who were pre-selected and subsequently notified, all had access to e-mail and used it in their daily work.

Two sets of web-based questionnaire were prepared for two types of respondents as a recognised means to acquire timely data focused directly on the research questions. The first one was for the national governments i.e. the national archival institutions and the other was for the professional associations of records, archives, administrators, information management and information technology.

In both categories, institutions and associations which were willing to participate were contacted via e-mail and the URLs were directly sent to the person responsible who had been identified earlier through the preliminary communication with the individual national archives and the professional organisations.

The questionnaire was distributed electronically via e-mail to 24 archival institutions in Australia, Canada, Europe, New Zealand, UK and the USA, acting as one of the critical tools to collect data required by the research question in phase one of the study. The questionnaire was designed to meet the aims and objectives of the first phase of the research, taking into consideration the needs of those receiving and completing the form and the writer. The questionnaire was designed to collect data from open-ended responses that could be analysed qualitatively, with space given for respondents to give additional free-text comments and information.

15 archival institutions agreed to participate. Similar messages were sent to 20 professional organisations of archivists of those countries (14 agreed to participate); seven professional records association (five agreed to participate); 28 associations of information management (nine agreed to participate); 16 associations of information technology (five agreed to participate) and 26 associations of administrators (eight were willing to take part in the survey). Those National Archives and professional organisations which declined to participate did so because they were not involved with any education and training of the record keepers defined in this study. However, the National Archives of Australia declined because they did not have time to answer the questionnaire.

5.1.2 *Questionnaire for administrators, archivists, records managers and IT personnel in Phase 4*

The success of electronic records management programmes in the Federal Ministries depends on the knowledge and skills of the key players (administrators, archivists, IT personnel and records managers) who create, use and manage electronic records in their respective Ministries. Questions derived from activities pertaining to existing ERM and education and training of those involved in managing these records. In addition, literature on electronic government programmes and initiatives was also used and referred to. The information gathered constituted the actual items in the questionnaires. One common questionnaire was designed for administrators, records managers and IT personnel.

5.1.3 *The key points considered in the questionnaire design*

One of the main points that had to be borne in mind in the process of wording the items contained in all of the questionnaires was to ensure that the informants understood the intent of each item. The wording and terms used in the construction of each item was simple and easy to understand by the respondents at the national archival institutions, professional organisations and various category of record keepers. Difficult terminology pertaining to records management principles and concepts and pertaining to electronic records management was avoided for the benefit of non archivists and records managers. In the cases of possible ambiguity, explanation were provided in parentheses (Cohen et. al., 2000; Bell, 1999). The number of words in each item was kept to the minimum.

The sequence of the questions was an important issue in these questionnaires. As the aims and the questions of the study suggest, the questionnaire commenced with a part asking for categorical data about the respondents' background such as years of working experience, job title and place of attachment. The items at the beginning of each part were kept simple and unthreatening to respondents and these were followed by more focused questions pertaining to the record keepers' present status of knowledge and skills on managing electronic records. The last items on each part were made as attractive as possible to ensure that the respondents completed all the questionnaires (Cohen et al 2000; Nachmias & Nachmias, 1993; Oppenheim, 1992). In this part of all the questionnaires, the last item consisted of open-ended questions asking for views and issues aimed at giving the respondents space to express their opinions on the subject under study.

To ensure high reliability as suggested by Black (1999), the questionnaires were more than sufficiently lengthy. Thus, response to a particular question that may not be valid owing to its wording or sheer miscommunication is balanced by other responses to a number of other questions. In addition the questionnaires were administered personally by the writer without involving research assistants.

To avoid misinterpretation of the item content, dichotomous questions were discarded. Instead questions with multiple answers were designed to make the questionnaire user friendly. This approach resulted in a lengthy questionnaire that at the same time increased both reliability and validity (Salkind 1997; Oppenheim, 1992, 2000).

The general layout of the questionnaire was made attractive, pleasantly laid out and easy to complete and easy to deliver (website interactive questionnaire in phase one of the study). This was possible with the help of contemporary word processing and internet facilities (Black, 1999; Bell, 1999). The answering strategy of ticking in the item box was maintained in all questionnaires (Salkind, 1997).

The questionnaires were administered in English language. Even though English is not the administrative language in Malaysia, the language is well understood by the respondents which consisted of university graduates (in Malaysia most universities used English in teaching). At the outset, all the questions were checked by the director of study and research supervisor. The recommendations and comments from both supervisors were taken into account and resulted in further deletion and addition of items. There were also comments concerning the general lay out and the sequencing of questions. These and many other comments led to further shaping and refinement of the questionnaires.

5.2 *Interviews*

Even though quantitative data were gathered from questionnaire, interviews as another means of data gathering were perceived necessary. This was to gain greater insight into this subject by investigating in depth the subject under study in the UK in the second phase of the study and in Malaysia in Phase 4.

An in depth, unstructured (open-ended questions), face to face form of interview suggested by Salkind (1997) and Oppenheim (1992, 2000) was employed. The purpose of the interview was exploratory in order to establish a clear idea and to get an in depth understanding of the data collected through the questionnaires from the administrators,

records managers, IT personnel and archivists. This was due to the limitations inherent in the mail questionnaire method.

According to Salkind (1997) the mail questionnaire can be used as an instrument for data collection only when the questions are straight forward enough to be comprehended solely on the basis of printed instructions and definitions. The answers have to be accepted as final because there is no opportunity to probe beyond the given answer, to clarify ambiguous answers, or to appraise the nonverbal behaviour of respondents. With the mail questionnaire, researchers have no control over the respondents' environment, hence they cannot be sure that the appropriate person completes the questionnaire. An individual other than the intended respondent may complete it. To counter the weaknesses of data collected by survey questionnaire, personnel interview allows great flexibility in the questioning process. The interview allows the interviewer to determine the wording of the questions, to clarify terms that are unclear, to control the order in which the questions are presented, and to probe for additional information and details (Salkind, 1997).

Despite the appropriateness of the interview method, several weaknesses that might affect the data obtained must be acknowledged. Patton (2002) argues that there are weaknesses or limitations in interview as a data collection method, namely: the participants can only report their perceptions of and perspectives on what has happened; interview data can be greatly affected by the emotional state of the interviewee at the time the interview session takes place; interview data are also subject to recall error; reactivity of the interviewee to the interviewer; and self-serving responses. Within the context of this study, these weaknesses were taken into consideration whereby the reliability of the data from interviews is ensured by interviewing more than one record keeper across the different levels in government (policy making levels, managerial and transactional levels) so that these data can be counterchecked and verified.

6. The pilot study in Phase 4

The field work and the process for preparing the instruments to be administered (questionnaires and interview questions in the fourth phase of the study) started a few days after arriving in Malaysia. The questionnaire and interview questions underwent several stages of scrutiny in Malaysia before its administration to the targeted samples, even though they had already been approved by the director of studies and supervisor in the UK. People of related specialisations such as the policy makers, IT personnel, and archivists at the policy making level and transactional level were contacted for their final judgment before distributing the questionnaire and before the interview sessions pilot testing.

It was important to test the main instruments which were used in the research in order to check the coherence of the questionnaire and interview statements and their validity in order to ensure that the statements could meet the objectives of the research questions. The importance of a pilot study has been supported by many writers in the field of research methodology such as Borg & Gall (1996) and Cohen et al (2000). They suggest that such preliminaries are important, while it is still possible to make any necessary changes or revisions. Piloting was undertaken with both the questionnaire and the interview instruments.

The pilot study for the questionnaire was conducted in Malaysia. Fourteen copies of the questionnaire were returned from the four groups of record keepers:

- Six questionnaires from archivists in the National Archives of Malaysia.
- Four questionnaires from administrators (Prime Minister's Department, Ministry of Education, Ministry of Health and Ministry of Primary Industry).
- Two questionnaires from IT personnel (Prime Minister's Department and Ministry of Defense).
- Two questionnaires from records managers (Prime Minister's Department and Ministry of Transport).

The returns indicated support and interest in the study. Since the questionnaire and interview questions underwent several stages of scrutiny in Malaysia and by the director of study and supervisor in UK, there was no comments on the content and layout of the questionnaire except some minor spelling mistake, typing error and sequence number of the questions. These was quickly amended and the questionnaires in their final printed form were deemed to be ready.

Interview piloting took place in Malaysia. The writer, firstly, conducted initial fieldwork with some archivists at the National Archives, an IT personnel, an administrator and a records manager at the Prime Minister's Department in July 2002 in order to explore the most important issues relating to the theme of ERM in EG policy context. For the purpose of getting more extensive information, the writer had to provide respondents with complete freedom to elaborate on the issues which were discussed. This was to allow for the emergence of points that are not preplanned by the writer (Patton, 2002). Even though the semi-structured questions for the interviews had been scrutinised, the content of the pilot interviews were used as guidelines and reminder for the writer when conducting the scheduled interview sessions. The pilot sessions served as practicing interview procedures and to eliminate any weaknesses of the writer in this area.

7. The field work in UK and Malaysia

When the final instruments were ready, permission to administer the questionnaires on the sample of the study was sought from the EPU of the Prime Minister's Department. Copies of this permission in the form of a researcher personal identity card were mailed through the EPU to all 24 Ministries as well as to the Malaysian National Archives embracing the targeted sample in the study.

The distribution of the questionnaire started in the Prime Minister's Department and was followed by the other 23 Federal Ministries. This was followed by a visit to the National Archives. Administering the questionnaires to the targeted samples in the Ministries and the National Archives of Malaysia did not pose any difficulty as the respondents had been

identified earlier through the sampling frame with the Head of the Human Resource Department of the individual Ministry and the National Archives.

In every Ministry and the National Archives visited the questionnaires were administered in person. This had several advantages, enriching the data obtained from the questionnaire:

a. instructions on how to fill in the questionnaires were provided and clarification of ambiguous terms and response to any queries by the respondents were dealt with instantly;
b. it was a fruitful opportunity for discussions with people at the grass roots level concerning various dimensions of electronic records management;
c. it increased the rate of return to the maximum possible extent;
d. it provided an opportunity for a brief verbal comparison between ERM through informal discussions with the record keepers at different Ministries and a chance to exchange personal views in this regard. This information was used to generate and formulate interview questions for the in-depth interview sessions.

With regard to completing the questionnaires it was not possible in all cases to take the completed questionnaire from the location because the targeted samples demanded more time to fill in the questionnaires. As a result they were guided on how to fill in the questionnaires at the time it was handed over to them. The questionnaires were collected later, in person following several telephone calls and e-mail. The questionnaires for record keepers in the Federal Ministries were administered during separate visits to all the Ministries. As with the situation encountered with administrators, records managers and IT personnel, the archivists as well asked for more time to fill in the questionnaires. The completed questionnaires were collected during a second visit to the Ministries and the National Archives. For those who demanded extra time for the return of the questionnaire, envelopes with the personal address of the writer with stamp fixed were provided.

40 questionnaires were returned within the time frame given and after e-mail reminders another six respondents returned their completed questionnaires. A total of 46 questionnaires were returned out of 67 archivists in the National Archives. However during data analysis process it was found that five questionnaires had to be discarded because of considerable missing data. Therefore only 41 questionnaire were accounted for the archivists. On the other hand, a total of 44 questionnaires were returned out of 72 respondents from the 24 Ministries and three were discarded also due to considerable amount of missing data. Only 41 questionnaire were analysed (see Chapter Eight and Nine).

For the interview, a total of 35 semi-structured interviews with open-ended questions were conducted and audio-taped for the purposes of this study (refer to Figure 4.4). All the formal interviews were audio tape-recorded and transcribed later, while the informal conversations were written down in a personal note book during and after conversations. To validate the findings of the interviews, respondents were asked to read their interview transcripts to check for accuracy. Mason (1998) suggests that this member checking is essential to establish factual and interpretative accuracy. On the other hand Bryman (1988) argues that the use of respondent validation is detrimental to the research findings "as subjects are not able to validate the inferences that are drawn for the researcher's academic audience unless the researcher specifically asks them to comment on these."

Figure 4.4. Total number of interviews conducted and hours spent

Interview participants	Number of interviews	Time in hours
Chief Assistent Director of EG Development Division MAMPU, Prime Minister's Department	3	3
Deputy Director of IT Department, Prime Minister's Department	3	3
Head of Systems Division, Prime Minister's Department	3	3
Head of Registry (records manager), Prime Minister's Department	3	3
Director General of the National Archives of Malaysia	2	2

Director of ER and IT Division, National Archives of Malaysia	4	3
Director of Procurement and AV Archives, National Archives of Malaysia	4	3
Head of Electronic Records, Standard and Inspectorate, National Archives of Malaysia	4	4
Head of Electronic Records, Social and Economic Sector, National Archives of Malaysia	3	3
Head of National Heroes' Gallery, National Archives of Malaysia	1	1
ERM training officer, UK National Archives	1	1
ERM training Officer, UK National Archives	1	1
ERM educator/trainer from NU for UK and Europe	2	3
Total	34	33

7.1 *Interviews in the UK in Phase 2*

The main intention of the interviews in the UK was to explore and discover the underlying concepts of pragmatic examples of education and training programmes for the record keepers to manage electronic records. Within the context of existing records management in the government environment in the UK there was a degree of similarity to the Malaysian EG initiatives. In order to understand the education and training provision for the government record keepers in UK a comprehensive review of the pragmatic examples of education and training programmes provision for the UK government record keepers was carried out. In addition to the document search an interview was conducted with the personnel involved in the design and delivery of the pragmatic examples provided by the UK National Archives and NU.

In-depth unstructured (open-ended questions) interviews (Nachmias & Nachmias, 1993; Oppenheim, 1992, 2000), were employed. The open-ended questions were carefully constructed. Aspects of the drivers for the EG has include the underlying philosophy of equipping people with competences because they are needed for the EG environment. The interview schedule incorporated the approach adopted by the UK National Archives

towards education and training of record keepers, including teaching methods, co-operation with universities, co-operation with other government departments as the recipients of the education and training programmes, and so forth. These approaches constituted the core of the interview schedule.

The purpose of the interview was exploratory to establish a clear idea about the subject in order to construct the model of education and training for record keepers to manage electronic records and to gain more insight about the design and delivery of the pragmatic examples as the base for the model construction. The key informants here were those persons who have experience and a direct role in designing and the delivery of the pragmatic examples in government and universities (Oppenheim, 1992, Anderson, 1986).

This type of interview targets those groups of authorised people who are experts in the area being investigated. The key persons who were identified through the survey questionnaire of the national governments and professional organizations in the first phase of the study were contacted by e-mail and briefed about the purposes of this research which was the follow up of the first phase of the study. Over the same e-mail communications, appointments for conducting the interviews had been made. Permission to record the interview was also requested.

7.2 *Interviews in Malaysia in Phase 4*

The primary aims of the interviews conducted in the fourth phase of the study were to investigate and identify the roles and responsibilities of different record keepers; to investigate the current situation in which the record keepers manage electronic records; and to examine the extent of the record keepers' knowledge and skills for electronic recordkeeping.

Since the record keepers were the main focus of this study, 12 interviews were conducted with the record keepers at the Prime Minister's Department and 19 interviews with the archivists at the National Archives of Malaysia. Each of the interviews lasted

approximately one to two hours. Figure 4.4 shows the number of interviews and hours spent.

The interview questions were carefully constructed under close supervision by the director of study and supervisor so as to ensure the reliability of the data collected. Aspects of policy, standards, procedures and practices of electronic records management, education and training on records management, knowledge and skills and roles and responsibilities of the record keepers within the government context were the core of the interview schedules.

7.3 *The conduct of the interviews*

The interviews always started with some warming up conversation focused on the writer's Ph.D programme, current issues on electronic records management in the electronic government in Malaysia and in the UK particularly. This was helpful in getting both the interviewer and the interviewee some light/relaxed moments together before launching into a serious interview sessions (Oppenheim, 1992). Once again the respondents were briefed about the purpose of the study and requested to allow tape-recording of the interviews. In addition, they were assured of their personal anonymity and the confidentiality of the responses they were going to provide (Cohen et al, 2000). The interviews conducted lasted between 50 minutes and one hour. During these interviews the following points were considered:

a. interviewees were given the freedom to talk freely about every topic or issues raised (Bell, 1999);
b. during the response period the researcher remained an active listener (Nachmias & Nachmias, 1993);
c. the interviewees took the lead for the most of the time. They seemed to have understood the questions and responded readily. Nevertheless, the interviewer was able to regain the lead from time to time to probe the interviewees' responses by paraphrasing, or summarising them for clarifications (Patton, 2002);
d. the manner in which the questions were asked was consistent for all the interviewees;

e. agreeing or disagreeing (value judgment) with what the respondents say was abandoned; neutrality was maintained throughout the period of the interviews (Nachmias & Nachmias, 1993);
f. the interviewees revealed many ideas and information after switching off the tape recorder. Interviewees' permission to deal with such data on part of the interviews was sought (Cohen et. al., 2000);
g. all the interviews were conducted in the interviewees' own offices at their respective departments or Ministries in a quiet atmosphere thereby reducing interruptions to a minimum (Oppenheim, 1992, 2000).

The actual interviews for the record keepers at the Prime Minister's Department and the National Archives of Malaysia and with those in the UK were very much organised around the major research questions as stated at the beginning of the study. These were further broken down into a number of sub-questions (refer to Appendix 6, 7 and 8) which guided the writer's thinking throughout the interview process. The major research questions and the sub-questions provided some broad guidelines to structure interview questions for the record keepers. In addition to these questions, there were sometimes some other broader questions which the writer thought may be related to some interesting issues which may in some ways connect to the research questions. Most of the time, the questions for the interviews kept building upon the responses given by the record keepers during the previous interviews and from the archivists' feedback. It was a process of continuous creation and evolution of questions.

7.4 *Focus group discussions in Malaysia in Phase 5*

As stated earlier, an integral part of the study consisted of five focus group sessions, otherwise known as "guided small group discussions" (Krueger, 1994). All sessions were convened as the main focus group sessions or presentations. All five events were led by the writer in collaboration with the Director of the Electronic Records Management and IT Division (ERM & IT Division) of the National Archives of Malaysia.

According to DePoy & Gitlin (1993) the focus group approach can be adopted:

- for an initial study in order to uncover the dimensions and boundaries of a phenomenon.
- to provide insights into patterns that have been identified by survey research.

To apply the foregoing to the education and training of the record keepers case as studied within the context of this research, the focus group discussions were initiated in August and September 2004. They were aimed at stimulating discussions on the suitability of the generic model education and training on ERM for record keepers in the public sector. Thus the sessions generated data on both scope and parameters. The data was meant to sharpen the conceptual framework model and serve as a platform for a suitable education and training model for the Malaysian record keepers within the context of the electronic government.

The focus group approach was regarded as particularly suitable for this study due to such methodological advantages (Krueger, 1994; Babbie, 1995) as cost and time effectiveness, high face validity, potential for valuable group interaction, immediate results, but also relatively straight forward administration. These advantages proved to be true in the case of the present study. Although the issues and questions touched upon during the focus group interviews in the present study were related to current knowledge, they were also linked at the same time, to specific points of view that came to the fore during the interview sessions.

Finally, the remaining one focus group session conducted in September 2004 was designed so that a representative of the first group of the administrators, records managers, IT personnel and archivists had the opportunity to evaluate the issues discussed during their earlier respective focus group session. This data was closely examined and evaluated with the ultimate view to enhance overall understanding of the different record keepers regarding the framework model in conceptual and practical

terms. The output of the final session became an important input for the development of a model for the education and training for record keepers to manage electronic records in the Malaysian federal Ministries.

Prior to looking more closely at each of the five focus group interviews, it should be noted that particular effort was made so that the focus group method employed in this study was applied in compliance with the standards set by the research literature (Krueger, 1994; DePoy & Gitlin, 1993; Morgan, 1993; Babbie, 1995) with respect to:

a. number of focus group sessions (i.e more than one to ensure generalisability of feedback);
b. subject selections (e.g. strict sampling methods do not apply when the main purpose of the focus group is to explore);
c. number of participants (optimum number between 4-10 people);
d. type of interview (most advantages for this type of enquiry: semi-structured);
e. time allocated to the interview (optimum time between: 1- 2 hours);

Special attention was given to such disadvantages (Krueger, 1994; Babbie, 1995) of the focus group approaches as the fact that moderators normally require special skills, group can be difficult to assemble, and the whole procedure must occur in a conducive to meaningful discussion environment. To minimise those potentially problematic factors, all discussions were convened as part of specially designed workshops at the National Archives of Malaysia in collaboration with the ERM & IT Division. Also, all but one discussions were moderated by the writer in collaboration with the Director of the ERM & IT Division of the National Archives of Malaysia in order to increase the likelihood of handling the audience in a focused and effective manner. There were enough groups to balance the idiosyncrasies of individual sessions (Krueger, 1994) (five groups altogether with the last one comprising of representatives of each earlier groups). Logistic problems were overcome by giving the participants incentives such as the provision of lunch and token for traveling cost.

8. Documentary analysis

Another major method of data collection is documentary analysis or, as it is sometimes called, content analysis (Robson, 1998). This method of data collection was of paramount importance to this study. At a very early stage of the study this method was employed to analyse the policy on electronic government and education and training programmes for record practitioners. The results were used, as mentioned earlier, in the construction of the questionnaires and the in depth interviews. The study was inevitably drawn to the use of this instrument in order to come to grips with the concept and practices of electronic government. The Federal Executive documents helped to identify the traits of the population under study, which, consequently, served to simplify the sampling process. Towards the end of the survey the documentary results were compared with the results obtained through the questionnaires and the interviews and, in many cases complemented and supplemented them (Bell, 1999; Nachmias & Nachmias, 1993).

It is worthwhile mentioning here some of the documents analysed both in Malaysia and UK. The following are examples of some documents analysed in Malaysia:

a. Federal Government directives on EG programmes.
b. Published papers on EG progress reports.
c. The electronic government committee reports.
d. Annual reports of Ministries.
e. The records of archivists' job specifications.
f. Research project report conducted by the National Archives on information systems in the Federal Government Ministries and departments;
g. Official national reports about the electronic government projects and achievements;
h. Official reports on e-SPARK (electronic records and archives) projects at the National Archives.
i. Archivists' biographical information and work experience.
j. Academic and professional backgrounds of archivists.
k. Conference papers on electronic records organised by the National Archives.

All these documents were crucial for this study because they are official source of information from the Ministry and the National Archives in printed form. Also, they indicate what has been done so far and what are the plans for the future. In a centralised administrative system such as in Malaysia, the policy documents from the top speak much about the national agendas and programmes.

In the UK some of the documents analysed were:

a. The rm3 published documents;
b. UK government White Paper (published);
c. Documents pertaining to e-TERM;
d. National Archives Human Resource Competency profile (published).
e. IMU brochures.

The aforementioned documents and many others helped to established a clear picture of the purposes, the rationale, and the background of the topic. In addition, the objectives and the rationale of the education and training for record keepers were gleaned via this process. These documents were carefully selected and for each of these documents, several contradictory documents were analysed to ascertain their truthfulness (Bell, 1999). Analysing the documents was an exhaustive and time-consuming process. Despite the fact that all the documents analysed were official, bias was found in certain instances. Some documents were difficult to obtain, for instance most government policy documents, project appraisal reports, archivists'job specification and performance reports were confidential (Robson, 1998). On the other hand, the results obtained through this method were not only of equal benefit as those obtained from questionnaires and interviews but in many instances were more beneficial, reliable and credible.

9. Validity and reliability of instruments

According to Bell (1999) the term validity is a means of verifying whether the instruments adopted in data collection do in deed measure or describe what they have been invented to measure or describe. On the other hand reliability refers to the extent to

which a test or measure yields the same results if re-administered under constant circumstances in all occasions. Regardless of the approach and techniques adopted in the data collection methods, they should be checked to verify they are valid and reliable.

In this study these issues were considered from the beginning of designing the instruments used to collect the data relevant to this study. Among the main issues that was taken care of during the questionnaire design to ensure its validity was that all the items were based on the analysis of the literature and documents on ERM, EG and role and responsibilities of the interviewees. The reliability of the questionnaires and interview questions was assured using the pilot testing method. This procedure included the administration of the questionnaires and interviews to purposefully selected samples of respondents.

10. Data management and analysis procedures

The writer had to develop IT knowledge and skills to record and analyse the large quantities of both quantitative and qualitative data that were collected through the various phases of the study. The data was wide-ranging and its analysis and complete mastery required both detailed work and the ability of the writer to see the 'bigger picture'. The need to cross compare the various data sets entailed careful and thorough work to ensure that the foundation on which to build the framework model for education and training in ERM, which was tested as a case study for Malaysia, was validated and verifiable.

Upon returning from the field work with more than 30 interview tapes, some transcribed materials, field notes, analytical memos, personal diary, and the various ministerial and National Archives policy documents, the writer was totally overwhelmed and did not know where to start to make sense of all the data. Following the guidance of the director of study and supervisor, the work load was divided into smaller and manageable tasks.

Different software packages such as Microsoft Excel, Microsoft Access and NUD.IST (Non-numerical Unstructured Data: Indexing Searching Theorising, see Richards & Richards, 1995) were used in order to find the best method for analysing the data.

Several weeks were spent to learn Microsoft Excel, Microsoft Access and NUD.IST to tackle the monumental task under close supervision from the director of study.

10.1 *Quantitative data analysis*

To start with, the data from the questionnaires in Phase 4 of the study were entered in the computer spreadsheet program Excel. The writer thought this was the best way to understand and interpret the data in relation to the aims and objectives of the fourth phase of the study. However due to several weaknesses of Excel, the spreadsheet created containing the questionnaire data could not ensure the uniformity of data entry and clear linkages between variables could not be established.

The questionnaire data from Excel was imported into the database programme Access. Access has good data entry facilities and its 'query' aspect allows easy selection of certain records, elementary groupings, data linking, summaries, totals and averaging all of which can be constructed via a graphical 'drag and drop' interface. This saved time on data entry, as information common to many individuals record keepers is only entered once, also helping to minimize errors.

Errors in data entry are common. Errors such as missing data, wrong information, impossible information and typing errors were all considered when entering data into Excel. So to ensure that all the entered data were error free, each questionnaire was assigned a number and entered onto the computer according to that number sequence and they were carefully screened and checked many times. Since the datasets were not very large, it allowed the writer to use double data entry to check for those errors. This was enhanced by having the original forms handy, secure and correctly ordered.

Precautionary measures were also taken to prevent data loss for all sorts of reasons, including viruses, data corruption (due to system crashes, switching off the machine when it should be etc.) or human error as these will also disturb the reliability, integrity and validity of the data. For this, data was always backed up and backup copies were

kept separate from the original, large data sets were stored by "zipping up" and everything were fully labeled.

The presentations of the quantitative data are in the form of descriptive statistics by using Access and tables and graphs by using Excel. Inferential statistics and statistical procedures were not used due to the non-probability sampling method used because the overall purpose was to collect, organized and understand the data to make better decisions on the development of an appropriate conceptual framework model. Therefore statistical procedures such as using the SPSS software package were not appropriate for the research questions.

10.2 *Qualitative data analysis*

Commentators such as Creswell (1994) and Patton (2002) suggest that there is no single correct method for analyzing qualitative data but clearly the course of action chosen must reflect the purposes of the study.

There were three groups of qualitative data collected in this study. They are:

a. qualitative data from the semi-structured questionnaires of open-ended questions for national governments and professional organisations in the first phase of the study.
b. qualitative data from unstructured open-ended interviews with the record keepers in the Malaysian Prime Minister's Department and National Archives of Malaysia.
c. qualitative data from interviews in the UK.
d. qualitative data from the focus group discussions in Malaysia.

As mentioned earlier, qualitative data in the first phase (national archival institutions and professional organisations) of the study was gathered from open-ended questions as part of the survey questionnaire. The aim of the data was to gain information on interest and

activities on pragmatic examples education and training models for record keepers to manage electronic records.

The process of qualitative data analysis is an inductive approach to classify qualitative data into groups (categories) and to identify patterns and relationships among these categories (McMillan & Schumacher, 1997). Patton (2002) defines the process of analyzing qualitative data as extracting fruitful information and reducing its actual size, to determine beneficial patterns and to build a frame work vision of it in order to arrive at the essence of what this information purports. There is no single ideal approach to analysing qualitative data (McMillan & Schumacher, 1997) so the writer tried to find a suitable pattern for the analysis within the general framework of suggested approaches in research texts (Patton, 2002; Cohen et. al., 2000; Miles & Huberman, 1984) guided by the research aims and objectives.

The tape recorded interviews were first transcribed in full. This was done to ensure that none of the social encounter factors arising during the interview were lost in the transcription (Cohen et al, 2000). The original tape recording of the interviews was used as a sort of memory refreshment of the actual situation that occurred during these interviews. Examples of the social encounters taken care of and noted down are:

- the tone of voice of the speakers.
- emphasis placed by the speaker.
- the mood of the speakers.
- interruptions.
- the speed of the talk (Cohen et al, 2000).

The transcribed interviews were first coded into categories which were descriptive or interpretative (Miles & Huberman, 1984) by using a combination of manual and computer-aided methods. NUDI.IST, a software tool that supports the development of hierarchical categories of coding was used. The writer used a methodology developed by Miles & Huberman (1984), involving categorising, and observing the interrelationships among these categories to identify patterns to analyse the main data.

The four sets of qualitative data were analysed separately. The analysis started with the longest and most complex interview by following the advice to "categorise richly and to code liberally" (Richards & Richards, 1995). Within the analysis platform of NUD.IST other than storing and retrieving, it is easy to create new categories, delete old categories, re-organise existing categories and re-index sections of interview transcripts. As anticipated, a large number of categories resulted, as everything was literally indexed at the preliminary stage. This was followed by reviewing the analysis procedures and objectives and the various aspects of the data were looked at in more detail. Following this, coding was done only on what was relevant to the defined research objectives.

As the analysis process developed hard copy printouts were increasingly used rather than working on screen. This was partly due to the writer's inexperience with NUD.IST and to explore deeply into the software would have meant more time was needed to learn every possibility of the software. Another reason was that, NUD.IST does not allow one to see or print out the whole "tree" of categories at once. To display the whole "tree" of categories at once, paper, scissors and glue were used. Thus using paper is the quickest way to be "close" to the data. As categories were developed and refined, lists of all categories were printed out for reference during indexing. This means when categories had become established, coding was done by indexing sections of the hard copy scripts in advance. This is important to ensure reliability and validity of data since the definition and attribution of coding (indexing) for the groupings of categories must be clear because this is dependent on the writer's critical thinking ability. Therefore the process of coding, analysis and interpreting the data were challenging. Even though NUD.IST can assist the researcher in aggregating and providing initial displays for the theory production but the researcher has to analyse and interpret the data personally with her/his own critical thinking ability in advance to allow theory to emerge from the data.

After coding separately for the four groups of the raw data, the writer ended up with numerous codes. At this point the writer has to find a way to condense the lists and believe that the connections would follow. Merging the codes (as this process is named)

is tedious via computer. The writer decided to merge the codes by hand without the computer. Then, copies of the codes were printed out and enlarged as a visual aid. The next process was cutting out the codes and grouped them into categories. Then the relationships among these categories were observed to identify patterns which served as the themes that emerged from the data.

Codes for each transcript and each segment in the transcript were created for writing and reporting the data analysis in Chapter Seven, Eight and Nine. By using a combination of manual method and NUD.IST, the following indexing code to interview data was generated. An example of the indexing code which was used is PMA1I01-18/7(20). In this example, 'PM' refers to the name of the Ministry, 'A1' refers to name of the interviewee, 'I' refers to interview, '01' refers to the interview number, '18/7' refers to the date of interview, '(20)' refers to paragraph number in the transcript text generated by NUD.IST. This mixed method of data cleaning was used to ensure accurate definition of categories so that reliability and validity of data was established.

Working with a computer and having computer-printed extracts and coding can provide a veneer of objectivity. However, the quality of the research is still dependent upon the quality of the researcher's efforts in checking the accuracy of transcripts, the definitions of categories for coding and the accuracy of applying those definitions. Some types of categories, described as factual (Richards & Richards, 1995) are relatively easy to define (e.g., administrator/archivist, state/national archives). Referential categories (Richards & Richards, 1995) are those dependent upon textual references in the transcripts in the case of this study. These can be largely descriptive or more interpretative (Miles & Weitzman, 1994). For example, a section of an interview describing how an archivist received a particular course on electronic records is assigned to a descriptive category about how archivists received a particular types of education and training, while a category about knowledge and skills on electronic records as an aspect of an archivist's development depends to a larger extent on an interpretation of the text. It is clear in this grouping of categories that the writer needed to ensure that the definition and attribution

of coding was clear and this was done by continually questioning the categories and definitions.

The time spent working manually on the script and the construction of the indexing code gave the writer an opportunity to ensure reliability for coding the transcript and content analysis. In addition internal reliability of the research (LeCompte & Goetz, 1982) was ensured when the whole process of data analysis was examined by the director of study and supervisor. The product of the analysis is the qualitative data presentation in the form of narrative and dataflow and diagrams.

The outcomes, or expected results, were an evaluated education and training model for record keepers to manage electronic records in the Malaysian Government. The conclusions reflect the information obtained from the different data sets collected by using different instruments and different analysis methods in the five different phases of the study. The results presented provide valid and reliable information to determine the benefits and to reflect upon whether the stated aims and objectives have been met.

11. Limitations of this study

The research project had the following limitations:

a. The study was conducted when the Malaysian EG initiatives were still in their pilot stage.
b. The data collection method was limited to survey, in-depth interview and focus group discussions without including observation and other methods.
c. The different professional objectives pursued by the different record keepers may have influenced their understanding of ERM, and education and training associated with it.
d. Although the generic model education and training for vocational and professional education and training in ERM for the different record keepers defined in this study had been developed, it was not possible to test it directly.

Last but not least, the research design, albeit relying solely on case study for the National Archives and the Prime Minister's Department, has limited the participation of record keepers in other Ministries. It is hereby recommended that any future research after the EG has been fully implemented should necessarily involve the participation of record keepers from other Ministries.

12. Conclusion

This chapter has presented and considered in its entirety the research design of this research study. In particular it has covered the justifications for the adoption of instruments and methods of data collection and analysis in every phase of the study. Finally, the general research limitations have been outlined and discussed.

PART II:

DEVELOPING A GENERIC MODEL FOR VOCATIONAL AND PROFESSIONAL EDUCATION AND TRAINING IN ERM

- Chapter Five - The Construction of A Generic Model for Vocational and Professional Education and Training
- Chapter Six -Survey Findings of National Archival Institutions and Related Professional Associations
- Chapter Seven -Towards Developing a Generic Model for Vocational and Professional Education and Training in ERM

CHAPTER FIVE

THE CONSTRUCTION OF A GENERIC MODEL OF VOCATIONAL AND PROFESSIONAL EDUCATION AND TRAINING

This chapter deals with the construction of a generic model of vocational and professional education and training. It starts with the analysis of concepts underpinning education and training and further explores the vocational and professional concepts. Explanation of these concepts allows the writer to describe the various components involved in the process of vocational and professional education and training in order to arrive at a generic model. This generic model serves as a foundation for the development of a generic model of vocational and professional education and training for ERM in Chapter Seven which is the first primary aim of the study.

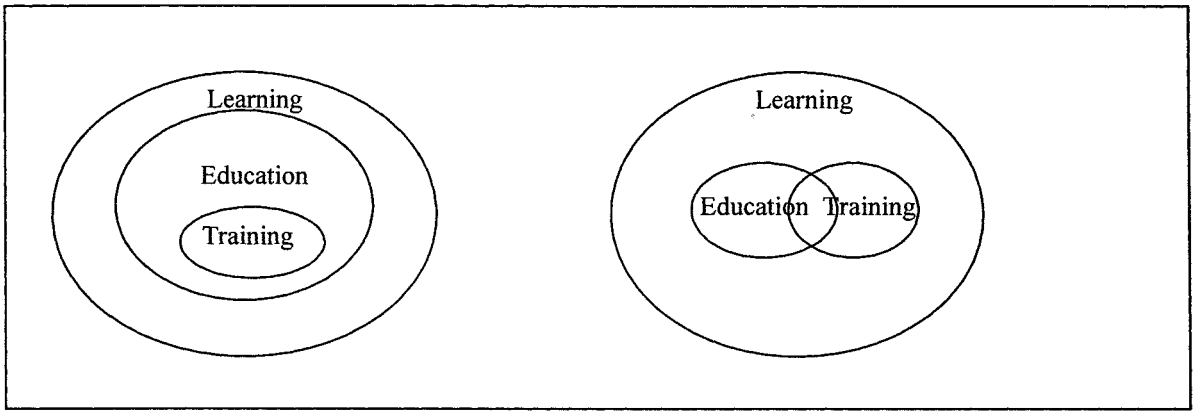
1. Introduction

As the concepts of education and training lie at the heart of this research, each needed to be properly defined before the research project could go any further. Writers such as Darkenwald & Merriam (1982), Dearden (1984), Jarvis (1985), Noe (1986), Goldstein & Gessner, (1988), Pring (1993), Brookes (1995), Tight (1996), Cowling (2003), Konrad (2004) and many others, advance several important underlying inter-related concepts explaining the phenomenon of education and training.

2. Identifying the conceptual foundation of education and training

Tight (1996) analyses *education* and *training* based on the idea of inclusion or exclusion in a diagrammatic form, with the concepts discussed portrayed as circles. Training may be represented as a small circle wholly contained within a larger circle labeled *education*, which itself is completely enclosed within an even larger circle called learning. *Education* and *training* may be shown as overlapping circles in Figure 5.1.

Figure 5.1. Diagrammatic representations of conceptual relations between education, training and learning. Adapted from Tight (1996 p. 12).



The presentation illustrates the idea that, while some learning activities may be definitively termed either *education* or *training,* in between there is a larger or smaller group of activities which might legitimately be called either or both. Kolb (1984) argues that learning is best conceived as a process, not in term of outcomes; that it is a continuous process grounded in experience; that this process requires the resolution of conflicts between different ways of looking at the world; that learning is an holistic process of adaptation to the world; that it involves transactions between the learner and the environment; and that it is the process of creating knowledge whereby this is created through the transformation of experience. According to Boyd et al (1980) and Knowles (1985) learning is the act or the process by which behavioural change, knowledge, skills and attitudes are required. Therefore, these definitions suggest that learning can be regarded as one of the processes of education and training.

This section will examine further these core concepts a little deeper in order to identify the differences and similarities between *education* and *training* in terms of their purposes and achievements.

2.1 *Education*

Peter (1966:45) claims that education:

> ... must involve knowledge or understanding and some kind of cognitive perspective which is not inert.

Darkenwald & Merriam (1982: 62) view *education* as follows:

> Education is broadly conceived as the deliberate, systematic and sustained effort to transmit, evoke, or acquire knowledge, understanding, attitude, values, or skills, as well as any outcome of the efforts.

Smith's (1982:54) concerns for the occurrence of learning is apparent from the following definition of education:

> The organised, systematic effort to foster learning, to establish the conditions, and to provide the activities through which learning occurs.

Jarvis (1985:25) looks at *education* from the aspects of aims and methods when he asserts *education* as:

> Any planned series of incidents, having a humanistic basis, directed towards the participation (s) learning, knowledge and understanding.

On the other hand, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) view education as:

> Organised and sustained instruction designed to communicate a combination of knowledge, skills and understanding valuable for all the activities of life.
> (quoted in Jarvis 1990:105).

The DES publication *Education and Training for the 21st Century* defines education as:

> ... the general development of knowledge, moral values and understanding required in all walks of life.
> (DES, 1991:1)

Dearden (1984:90) looks at *education* from the aspects of knowledge and understanding when he states:

> Probably the clearest if not the only criterion of educational value ... is that the learning in question contributes to the development of knowledge and understanding, in both breadth and depth.

Barrow & Milburn (quoted in Tight, 1996:106) on the other hand, argue that understanding is at the heart of *education*, when they assert:

> ... use of the word 'understanding', as opposed to 'knowledge', implies that what is at the issue is something more than mere information and the ability to relay or act in accordance with formulae, prescriptions and instructions (the latter is characteristic of training rather than education). An ability to recite dates, answer general knowledge quizzes, or produce even quite complex pieces of reasoning, is not necessary to being educated. Rather one requires of an educated person that he [sic] should have internalised information, explanation, and reasoning, and made sense of it. He should understand the principles behind the specifics that he encounters; he sets particulars in a wider frame theoretical understanding. ... The educated person has understanding across a range of human knowledge.

Based on these definitions, it can be summarised that education is an organised systematic effort to foster the learning process which involves the acquisition of knowledge, understanding, attitude, values or skills that needs to be transmitted to learners. After the acquisition of knowledge, attitude, values or skills, a person can be called educated when he/she has a wider frame of principles and conceptual understanding of the various fields of human knowledge (Smith, 1982). Understanding as the outcome of the educational process derives from the elements of design and content of the learning activity. On the design side, education can occur either through deliberate, organised and systematic efforts, or under lesser or non-regulated environments which include normal life circumstances, while the elements of content include the type of knowledge, skills, attitudes and values that need to be transmitted to specific categories of learners Darkenwald & Merriam (1982). This implies the necessity to identify the needs or the context or driver for educational activities to take place in order to establish the aims and objectives of education for those specific categories of learners who are the target groups to be educated. To fulfill the need for education for the target groups, education can be provided either through deliberate, organised and systematic efforts of the different educational programmes within which there are various pedagogic approaches and modes of delivery for the learning process to take place.

Before synthesising the similarities and differences between *education* and *training*, how then, to distinguish *education* from *training*?

2.2 *Training*

The existing literature, including the Malaysian Government's publications, pose some controversies with regard to the usage of the terms *education* and *training*. The two words have been used interchangeably. Kenny & Donnelly (quoted in Jarvis, 1985) observe that the word *training* is sometimes used as a synonym for *education*.

Knowles (1990) points out that *training* tends to be aimed towards specific objectives while *education* tends to be aimed towards broader objectives. He also argues that training is mechanistic in nature as compared to education which is more organismic. What is meant by mechanistic is that *training* as opposed to *education* involves the details of routine procedures of operative skills to make the related tasks work, while organismic is associated with organised and systematic or the unified whole of educational process which involves the acquisition of knowledge and understanding within the context of organisation/institution such as schools, colleges, universities and other educational institutions, the same cannot be said of Knowles's view of training (Knowles, 1990).

The same distinction was given by Singer (quoted in Jarvis, 1985:53) when he said:

> Education is a process of acquiring background knowledge of subject. Normally this takes place at schools, technical colleges, universities, appreciation courses or by private study. Training is to use background knowledge in a specific work situation. It is thus concerned with job performance related to specific skill as well as with the application of knowledge at work.

Darkenwald & Merriam (1982:44) see training as:

> ...activities designed to improve skill or performance on the job the employee is presently doing or is being lined to do.

Noe (1986:736) also defines training as follows:

> ... planned learning experience designed
> to bring about permanent change in an individual's knowledge,
> attitudes, skills or competence.

In addition to the above definitions, Peters (1967:15) defines *training* by stressing the idea of mastering the task or role, and the need for practice to enable the individual to do so. He states:

> The concept of training has application when (i) there is some
> specifiable type of performance that has to be mastered, (ii) practice
> is required for the mastery of it.

Other definitions also concern themselves with the location of the training to be undertaken:

> Training is defined as the systematic acquisition of skills,
> rules, concepts or attitudes that result in improved performance
> in the work situation. In some of these instances, such as
> direct on-the-job training, the instructional environment is
> very similar if not identical to the on-the-job environment.
> In other instances, the training occurs in a place far removed
> from the actual worksite, such as a classroom.
>
> (Goldstein & Gessner, 1988:43).

Dearden (1984) gives a wider scope of the term when he uses competence to limit the training concept to preparing people to respond to common situations, while demonstrating its application to jobs of greater or lesser status. In his words Dearden says:

> Training typically involves instruction and practice aimed at
> reaching a particular level of competence or operative skill.
> As a result of training we are able to respond adequately and
> appropriately to some expected and typical situation. Often
> training addresses itself to improving performance in direct
> dealing with things. Thus it is necessary to train drivers and pilots,
> carpenters and surgeons, electricians and computer programmers.
> Other sorts of training are more concerned with dealing with
> people, as with training in sales techniques, training for
> supervisory positions or assertiveness training for women.
> Yet other kinds of training are more indirectly concerned with
> changing or controlling people or things, such as training to be an
> architect, lawyer or administrator (Dearden, 1984:59).

Dearden uses the idea of competence or operative efficiency. He also distinguishes between training dealing with things, with people, and with change or control. Dearden's definition of training includes examples which might equally be thought of as education for examples people such as architects, lawyers or administrators who also need education to get their professional qualification.

On the other hand, Brookes (1995:62) defines training as:

> A planned process to modify attitude, knowledge or skill behaviour through learning experience to achieve effective performance in an active or range of activities. Its purpose, in the work situation, is to develop the abilities of the individual and to satisfy the current and future manpower needs of the organisation.

Having examined each of the definitions in the preceding sections, synthesis of their conceptual propositions is illustrated in Figure 5.2. The points of convergence are indicated with a √ among the writers/scholars.

2.3 *Similarities and differences between education and training*

Close examination of the contents of Figure 5.2, leads to the following observations:

a. All sources on *education* affirm that gaining/developing knowledge is the main purpose of *education* with understanding as the element of achievement. However knowledge is not an exclusive element for *education* because two sources (Noe, 1986 and Brookes, 1995) proposed knowledge as one of the purposes of *training*.

b. All sources on *training* affirm that acquiring/developing skills is the main purpose of *training* with competence or job improvement as the elements of achievement. But skill is not a distinctive element in *training* because skill appears as an element of *education* as suggested by Darkenwald & Merriam (1982) and UNESCO (quoted in Jarvis, 1990).

Figure 5.2. Synthesis of elements of *education* and *training*: points of convergence among the relevant sources.

EDUCATION									
Relevant Sources									
Elements of education	Peter (1966)	Singer (1966) (quoted in Jarvis, 1985)	Darkenwald & Merriam (1982)	Dearden (1984)	Jarvis (1985)	Barrow & Milburn (1990) (quoted in Tight, 1996)	Knowles (1990)	UNESCO (1990) (quoted in Jarvis, 1990)	DES (1991)
Knowledge	√	√	√	√	√	√	√	√	√
Attitude			√						
Values			√	√				√	√
Skills			√					√	
Understanding	√	√	√	√	√	√	√	√	√
Mechanistic			√					√	
Organismic			√	√			√	√	√
Broad objectives	√	√	√	√	√	√	√	√	√
Specific objectives									
TRAINING									
Relevant Sources									
Elements of training	Peter (1967)	Singer (1978) (quoted in Jarvis, 1985)	Darkenwald & Merriam (1982)	Dearden (1984)	Noe (1986)	Barrow & Milburn (1990) (quoted in Tight, 1996)	Goldstein & Gessner (1990)	Knowles (1990)	Brookes (1995)
Knowledge					√				√
Attitude					√		√		√
Values									
Skills	√	√	√	√	√	√	√	√	√
Competence	√	√	√	√	√	√	√	√	√
Mechanistic	√	√	√	√	√	√	√	√	√
Organismic									
Broad objectives									
Specific objectives	√	√	√	√	√	√	√	√	√

c. The majority of sources on *education* accept values as one of the purposes of *education* and this is a distinctive element because none of the sources proposed values as the purpose for *training*.

d. Attitude appears more under *training* as suggested by Noe (1986), Goldstein & Gessner (1988) and Brookes (1995), on the other hand only Darkenwald and Merriam (1982) suggested attitude is one of the purposes of *education.*

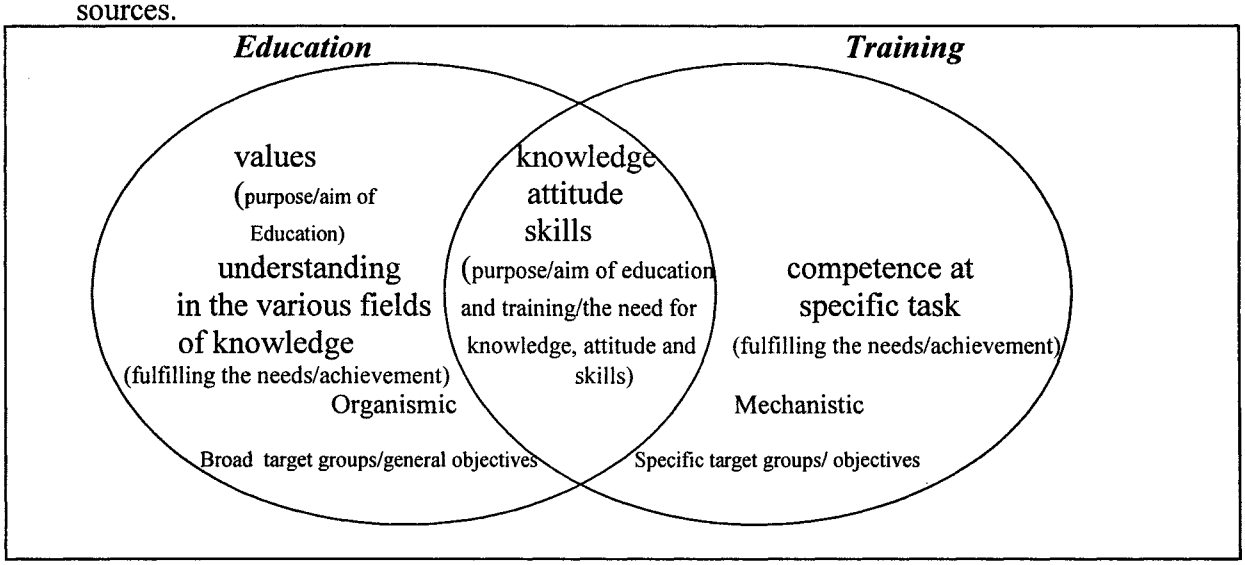
e. The majority of sources on *education* suggest it is organismic; comparatively *training* is mechanistic as skills are acquired through training. But skill is not a distinctive element of *training* because two sources on *education* also accept that skills are acquired mechanistically as suggested by Darkenwald & Merriam (1982) and UNESCO (Jarvis, 1990).

f. All sources on *education* accept that the educational process aims at broad or general objectives, while all sources on *training* affirm that training aims at specific objectives.

g. Achievement of *education* i.e. understanding of the various fields of human knowledge appears to be distinctive from the achievement of *training* i.e. competence/job improvement of a specific/particular task.

The differences and similarities of *education* and *training* can be graphically represented based on Tight's (1996) idea of inclusion or exclusion in the Venn Diagram below in Figure 5.3.

Figure 5.3. Relationship between *education* and *training* synthesised from the relevant sources.



The various relevant sources used the purposes for *education* and *training* (knowledge, attitude and skills) as an example to illustrate overlapping relationships, while values as one of the purposes of *education* together with elements on achievements were used to differentiate between the two concepts.

From the synthesis represented in Figure 5.3 there are several dimensions that can be extracted from education and training activities.

Firstly, the overlapping relationship between *education* and *training* locates the concept of the purpose of education and training or the need of an individual for knowledge, attitude and skills. The individual lack of knowledge, attitude and skills forms the situation in which a need for *education* and *training* arises. In other words the need can be interpreted as the expression of 'context or driver for establishing the purpose or aims and objectives or the necessity' for *education* and *training*. UNESCO (quoted in Jarvis, 1990) identifies the purpose (context/driver/establishing the need/aims and objectives) of *education* as the personal 'need for understanding in the various fields of knowledge'. Whereas Figure 5.3 illustrates 'understanding in the various fields of knowledge' is perceived as the achievement at the end of an educational process. In comparison, the purpose (context/driver/establishing the need/aims and objectives) of *training* is the personal 'need to acquire specific skill(s) required in the performance of specific task(s) at work' (Darkenwald & Merriam 1982, Noe 1986, Goldstein & Gessner, 1988, Brookes, 1995), with 'competence at a specific task' is the measure of training achievement as illustrated in Figure 5.3.

Secondly, as illustrated in Figure 5.3, *education* has a broad target but *training* has a specific target group to be trained. Thus the 'target to be educated and trained' emerged as another dimension of *education* and *training*. From the analysis, conclusion can be drawn that *education* is an organised systematic effort (organismic in nature as suggested by Knowles (1990)) to foster the learning process involving the acquisition of knowledge, attitude, skills and values to be transmitted to the target learner with the intention of joining a profession or practitioners in any occupation. This is based on the

broad target and objectives of *education* (Darkenwald & Merriam 1982, UNESCO (in Jarvis 1990, DES 1991) where the target groups can be the different types of players who will perform or be performing different roles and responsibilities (Hyland 1994, Boydell & Leary 1996, Baker 1997). By comparison, *training* aims at a specific target group because the outcome of *training* is concerned specifically with the competence of those individuals who are working or employed. In any organisation the target groups are the different types of players/workers who perform different roles and responsibilities across different levels (Hyland 1994, Herzog 1996).

Finally, the elements of *education* (knowledge, attitude, skills and values) and *training* (knowledge, attitude and skills) in Figure 5.3 derive from the elements of design and content of the learning activity. According to Darkenwald & Merriam (1982), the design and content elements represent the methods or approaches to 'fulfilling the need' for *education* and *training* of the target groups. The design aspect includes the types of programmes, while the element of content includes the type of knowledge, attitude, values and skills that need to be transmitted to the various categories or specific categories of learners. On the *education* side, the target groups are provided with sufficient knowledge/understanding for the ultimate purpose of career responsibilities through the various accredited programmes provided by organisation/institution such as schools, colleges, universities and other educational institutions (Knowles, 1990). The curriculum content/subject matter of *education* is concerned with theory, principles and standard practices based on core knowledge and specialist knowledge with knowledge-based pedagogy (Kelly 1989, Eraut 1994). Mode of delivery is generally classroom/face to face way learning with accreditation as method of assessment based on academic modular/credit based qualification (Ram 1989, Watson et al 1989, Tight 1993, Tomlinson & Kilner 1990, Walker 1994).

On the other hand, a *training* curriculum is concerned with occupational practices focusing on competences or skills on specific jobs to be acquired by the target learners (Peter, 1967). These are acquired through competence-based programmes and on-the-job learning (Buckley & Caple 1990, Jessup, 1991, Hodkinson & Issitt 1995, Finegold 1999,

Ball 1999). *Training* curriculum content/subject matter is concerned with occupational standard practices based on core skills and specialist skills (Slobada 1986, Truelove 1997, Lloyd & Cook 1993). Training is delivered by using classroom/face to face and on-the-job learning with mentoring and coaching styles (Brookes, 1995). At the end of the *training* session learners are often or are normally awarded with certificate of achievement or certificate of attendance.

The three dimensions - context/driver (aims and objectives), target to be educated and trained, fulfilling the need for education and training - which emerged from the analysis

Figure 5.4. **Generic Model of Education and Training**

Dimensions	Education	Training
Context/Driver Establishing the need/ necessity for education and training (aims and objectives of education and training)	The need for knowledge and understanding in the various fields of human knowledge for: -personal reason/to earn a living. (UNESCO in Jarvis 1990, DES 1991)	The need of specific skill (s) required to gain competence in the performance of a specific task (s) for: -personal reason/to increase ability to fulfill duty at work. (Darkenwald & Merriam 1982, Dearden 1984, Noe 1986, Goldstein & Gessner 1988)
Target to be educated and trained	Those with the intention of joining a profession and practitioners in any occupation: -different types of players who will perform/ performing different roles and responsibilities. -different level of players. (Hyland 1994, Boydell & Leary 1996, Baker 1997, Yanakieva 2001)	All categories of staff involved in work processes relating to their specific responsibilities: -different types of players who perform different roles and responsibilities in an organisation. -different levels of players. (Hyland 1994, Herzog 1996)
Fulfilling the need for education and training	To provide the target groups with sufficient knowledge/understanding for the ultimate purpose of fulfilling the career responsibilities through: -accredited programmes (Fletcher 1991, Hyland 1994)	To provide the target groups with sufficient skill (s) needed for the practical applications of skills required by the nature of work (job specification) through: -competence-based on-the-job programmes (Jessup 1991, Burke 1995, Hodkinson & Issitt 1995, Finegold 1999, Ball 1999)
	-curriculum content/subject matter: -theory, principles and standard practices. -modules: -core knowledge -specialist knowledge (Kelly 1989, Eraut 1994)	-curriculum content/subject matter: -occupational standard practices. -modules: -core skill (s) -specialist skill (s) (Slobada 1986, Barnett 1994, Truelove 1997)

	-pedagogic/learning approach: -knowledge-based (Kolb 1984) -mode of delivery: -classroom/face to face (Ram 1989, Bell & Tight 1993)	-pedagogic/learning approach: -competence-based (Brookes 1995) -mode of delivery: -classroom/face to face (Brookes 1995)
	-achievement: -accreditation -academic modular/credit based qualification. (Ram 1989, Walker 1994, Watson et al 1989).	-achievement: -training certificate/certificate of attendance.

of education and training concepts underpinned the construction of a generic model of *education* and *training* presented in Figure 5.4.

2.4 *Vocational and professional education and training*

Having identified the conceptual foundation of education and training and developed a generic model for education and training, the study attempted to place the concepts of vocational and professional into the generic model in order to construct a generic model of vocational and professional education and training. This generic model was then used to underpin the development of a model based on pragmatic examples of education and training on electronic records which was finally used to construct a generic vocational and professional education and training model for ERM.

For the purpose of constructing the generic model of vocational and professional education and training, this section attempts a conceptual investigation aimed at defining vocational and professional education and training with the intention of understanding what lies behind the concepts *vocational* and *professional.*

2.4.1 *Vocational education and training*

The Malaysian Ministry of Education defines *vocational education* and *training* in relation to the acquisition of generic or specific skills with a view to employment (Deraman et al, 2002).

Jessup (1990:123) argues that *vocational training* is about acquiring competence. He explains,

> Occupational competence is about being able to perform in employment. Being able to perform effectively in a work role, taking into account the organisational and interpersonal problems employees have to cope with in their day-to-day work, is certainly at the heart of occupational competence.

The UNESCO Convention (in British Council, 2004) described vocational education and training as all of the forms and levels of the educational and training process involving, in addition to general knowledge, understanding and attitudes, the study of technologies and related sciences, the acquisition of practical skills and know-how relating to occupations in the various sectors of economic and social life.

In summary in the broadest context, vocational education involves acquisition of knowledge, understanding and attitude for living, while vocational training involves the acquisition of skills or competence for living. In the UK and Malaysia for example, vocational education and training includes commercial, technical and professional development. These all require knowledge, understanding and skills, or in other words competence. Competence based education and training is part of self development and life long learning (British Council 2004; Deraman et. al 2002).

2.4.2 *Professional education and training*

According to Tight (1996) the term *professional* is not applicable to every individual adult, but is restricted to particular kinds of careers. It suggests both a certain, higher level of occupational activity and a degree of exclusivity such as the medical and law professions.

However, Hoyle & John (1995:1) argue that,

> Professions are more easily instanced than defined, and dictionaries tend to convey the meaning of the term more through example than by identifying distinctive qualities. Where qualities are cited these usually refer to *knowledge* and *responsibility*.

The *knowledge* and *responsibility* as mentioned by Hoyle & John reflects the idea of work which is associated with the idea of a profession.

According to Becher (1994) 'classic' professions such as medicine and law would likely be accepted as such by everybody. In most other cases, however, for example nursing, information work, records and archives related work and school teaching, there would probably be disagreements as to the status.

A variety of approaches have, nevertheless, been developed to summarise the characteristics to enable the identification of *professions*. These include the use of typical traits or sets of criteria, divisions of labour and occupational control (Jones & Joss, 1995). Different forms of profession may also be recognised, such as the practical, technical and managerial and, in addition, those termed reflective practitioners (Schon 1988). These forms may be distinguished in terms of their self-image, theoretical orientation, knowledge and value base, standard practice, and client relations.

Siegrist (1994:3) advances an ideal concept of *profession* when he defines *professional education* as,

> a particular sort of full-time occupation, the practice of which presupposes a specialised educational background. Specialised education allows the professional to secure theoretical expertise relevant to his or her field as well as to acquire general knowledge and a sense of ethical values.

The different definitions suggest that *profession* is an essentially contested concept. Although we do not have a shared idea of what constitutes a *profession*, it is still possible to discuss *professional education* and *training*. Bines & Watson (Tight, 1996:14-15) have characterised *professional education* and *training* as,

> It has tended to take place in schools associated with, or incorporated in, institutions of higher education. It is characterised by the division of professional education into three main elements ... the development and

> transmission of a systematic knowledge base ... the interpretation and application of the knowledge base to practice ... supervised practice in selected placements.

On the *education* aspect, Bines & Watson emphasise the acquisition of knowledge and understanding and the acquisition of professional competence through practice, with students having skilled practitioners as coaches or mentors. It may be characterised by the emphasis placed upon continuing professional development, accepting that professionals, like all workers, need training for competence because they can not expect to be prepared for their whole careers during their initial education (Garry & Cowan 1986; Welsh & Woodward 1989).

From the above discussions, the assertion can be made that *vocational* and *professional* constitute a particular kind of career which requires specialised educational background. *Vocational* and *professional education* involves the acquisition of knowledge, understanding and attitude. On the other hand, *vocational* and *professional training* involves acquisition of skills or competence. These are understanding and competence for living. With this understanding, a generic model of *vocational and professional education* and *training* was constructed based on the three dimensions which emerged from the earlier analysis of the concepts of *education* and *training*.

3. A Generic Model of Vocational and Professional Education and Training

The three dimensions (the context/driver; target to be educated and trained and fulfilling the need for education and training) of the generic model of education and training were used to underpin the construction of vocational and professional education and training model as these three dimensions formed the basic concepts of education and training processes.

3.1 **Education**

3.1.1 *Context/Driver*

The first dimension in the generic model is the situation within which a need for education and training arises or establishing the necessity for vocational/professional

education and training. In other words determining the aims and objectives of education and training. Jarvis (1985) advances that at the root of the problem of education and training is the concept of learning need. Lawson (1975) defines a need as a gap that exists between the current results and the anticipated results. The definition is harmonious with the definition given by Knapper & Croply (1985) that a need indicates a presence of discrepancy or contradiction between two situations. According to these writers, this discrepancy occurs due to the lack of knowledge, skills and attitudes in individuals. Knowles (1984) points out that education tends to be aimed towards broader needs or objectives while training tends to be aimed towards specific needs or objectives.

Based on the analysis in the previous sections, the aim and objective or the purpose of vocational/professional education is the need to develop knowledge in the various occupations or work or profession for personal and economic reasons as suggested by the literature (Fletcher, 1991; Rowarth, 1990; Greenacre 1990; Boffy 1990, Raggatt & Williams, 1999)

Jarvis (1985), Jessup (1990), Sheckleton (1990) and Brookes (1995) suggest that vocational/professional education and training is aimed at satisfying personal objectives when it serves as an extension of formal education, both immediate and after a lapse of time with the intention of acquiring knowledge in the various occupational area for personal development and interest.

From the economic point of view, vocational/professional education is aimed at developing learners' job potential to meet the varying needs of business and industry or the national need (Jessup, 1990 & 1991; Herzog, 1996; Raggatt & Williams, 1999). Another objective is to raise the productivity and improve the flexibility and motivation of the labour force/market as suggested by NCVQ 1990 (Hyland, 1994; Rust (1992). This need is related to the aim of overcoming skill shortages which may develop and impede growth of innovation, and to ensure that there is sufficient education in emerging new skills (Jessup 1990 & 1991; NCVQ 1990 in Hayland 1994; Finegold, 1998).

3.1.2 *Target to be educated*

The second dimension in the generic model is the target to be educated. This involves the individual or group who needs vocational/professional education. There is a need for different levels of education, depending upon the degree and nature of the responsibility of types of post found in an organisation or in occupational areas (as for example senior manager, first-line or section manager, supervisor, general assistant, other basic-grade staff) or the target groups can be categorised into tactical and strategic level and operational level (Boydell & Leary, 1996).

The target to be educated as described in the generic model are those with the intention of joining a profession and practitioners in any occupational area of updating their knowledge and understanding. These are different types of players who perform different roles and responsibilities in the tactical and strategic level such as senior managers, managers and executives. These categories of roles and responsibilities are concerned with formulating and executing policy, rules, procedures and decision making process (Baker, 1997; Boydell & Leary, 1996; Yanakieva, 2001). In the NVQ framework, these are the professional and the managerial group at level 5 (Hyland, 1994).

3.1.3 *Fulfilling the need for vocational and professional education*

The third dimension in the proposed generic model is the 'how' and 'what' (the content) to provide the target groups with the knowledge or skills to carry out their roles and responsibilities. This could be achieved through the various programmes relevant for the provision of vocational/professional education.

3.1.3.1 *Education programmes*

Education programmes provide the target groups with sufficient knowledge and understanding for the ultimate purpose of fulfilling their professional responsibilities. This can be acquired through accredited programmes for examples provided by universities, colleges and vocational schools. These accredited programmes are validated by employer-sectoral/occupational lead bodies, examination and assessment council or

professional society/organisations (Rust, 1992; Fletcher, 1991; Hyland, 1994; Raggat & Williams, 1999)

3.1.3.2 *Curriculum content/subject matter*

The knowledge or skills to be acquired by the target groups must be provided by the content of the curriculum relevant to the industry and commerce. Pring (1993) suggests that the curriculum contents must be planned in terms of specific objectives which arise from an analysis of what the economy needs or what skills certain occupations demand. The educational experience as a whole should foster attitudes and disposition such as entrepreneurship and enterprise. Therefore the curriculum must be planned in terms of specific objectives which arise from an analysis of what the economy needs (Wirth, 1991; Lewis 1991).

The target group should be provided with core knowledge (which may be common to all learners within a vocational area or a qualification structure) on theory, principles and standard practices to achieve understanding in any occupational area of concern and general knowledge about industry and commerce (Hyland, 1994). Understanding could be achieved as well through specialist knowledge on specific occupational areas such as work processes in engineering, architecture, agriculture, law, nursing etc.

3.1.3.3 *Pedagogic/ learning approach*

In the generic model, one of the methods of providing the target groups with sufficient knowledge or skills is by using various pedagogic or learning approaches such as knowledge-based or work/competence-based (Fletcher, 1991; Truelove, 1997; Rae, 1997).

For education, the suitable pedagogy for the target groups to acquire knowledge is through the knowledge-based approach. This approach adopts Kolb's learning cycle (Kolb, 1984) from which developed a model of learning styles and preferences. Kolb developed a four stage cycle to describe the ideal sequence for effective learning to take place. They are concrete experience (the learner personally involved in something and

gains feedback), reflective observation (feelings and thoughts emerging from reflection and analysis that generalisations or concepts may be generated), abstract conceptualisation (from generalisations and conceptual understanding that new situation be tackled effectively) and active experimentation (the newly learned concepts must be tested out in new situations where the learner make the link between theory and action by planning for the action and carrying it out) (Rae, 1997; Truelove, 1997).

3.1.3.4 *Mode of delivery*

A suitable mode of delivery of curriculum contents or subject matter is essential to achieve the aims and objectives of occupational education and training. There are many methods of delivery as suggested by the literature review.

Traditional classroom method where learners and educators meet face to face, distance learning, web-based learning and independent study can be used as mode of delivery for the learning activity to take place.

In distance learning, learners are separated from their educators in both time and space. Essentially, learners are provided with a series of materials that they are required to work through with the support of internet facilities to communicate with their educators and workshops occasionally. Various tasks are completed and assessed and sometimes there is a formal examination at the end of the programme of work (Brookes, 1995).

Web-based learning is another method in which web sites are established to provide a structured learning opportunity for the individual learner to develop at their own pace. This requires internet connectivity on the part of learners and educators.

Independent study methods were developed to enable individual students to study for the qualification independently, with the support of specialist staff, group sessions and the facilities of the institution. However these processes have to meet with the criteria and standards set by the accrediting body and the institution itself. The individual student is responsible for determining their own curriculum, syllabus, study methods and

assessment pattern, for getting these approved, and for scheduling and carrying out the work involved. In this case the student and the institution draw up a learning agreement or contract (Tight, 1996).

3.1.3.5 *Achievement*

Achievement is associated with assessment. Learners who go through any education and training had to have proof of their achievements at the end of the day otherwise education and training will be meaningless.

The generic model adopts accreditation for educational achievement from accredited universities, institutions or bodies (for example Industry Lead Bodies, City and Guilds in the UK) after the learners have completed academic modules/certain required credit units based on modular systems. Modular systems breaks down boundaries between subjects and courses which enable individual students to create their own programmes of study (Squires 1986). Such flexibility allows learners to add their modules through, for examples, extended project work or the accreditation of prior learning. This could facilitate vocational/professional education especially for practitioners/employee.

Achievement under education could also be affirmed by getting professional recognition from professional associations/organisations/society of the related profession.

3.2 **Training**

3.2.1 *Context/Driver*

Comparatively, the necessity for vocational/professional training is the need to gain specific skill (s) required in the performance of a specific task (s) in the work place for personal and organisational reasons (Rowarth, 1990; Millington, 1990; Boffy, 1990).

The personal reason as suggested by the Manpower Services Commision Report 1983 (Jarvis, 1985) to enable employees to up-date and extend their skills and to develop professionally through their working lives.

In contrast to the broader need for *education* at the workforce and national level, the necessity for *training* is narrower as it derives from the need of the organisation. The organisation needs different kinds of specially qualified employees to fulfill their specific tasks to fulfill the specific mission and vision of the organisation or employee (Fletcher, 1991; Field & Drysdale 1991). The aim is to raise the productivity and improve the employees' specific job performance at the individual level (Hyland, 1994). To ensure this aim is fulfilled, employees must be equipped with sufficient training in the new required skills so that they can adjust quickly and effectively to new specific methods, processes, products, services and technologies (Field & Drysdale 1991; Brookes, 1995; Herzog, 1996; Rae 1997). Thus the training need is driven by the requirements of the workplace, and more particularly as reflecting the needs of employers (Field, 1999)

3.2.2 *Target to be trained*

Categories of staff involved in work processes relating to their professional responsibilities are the target to be trained because organisations need people who perform at required levels and to necessary standards (Truelove, 1997). In this case the needs arising from these levels of performance are different because there are different types of players at different levels of job who perform different roles and responsibilities. These are the managerial and operational levels who need to perform their occupational roles and responsibilities in accordance with the standard required by the work place for example the junior managers, supervisors, technician, general assistants and administrative staff (Hyland, 1994; Herzog, 1996).

3.2.3 *Fulfilling the need for vocational and professional training*

3.2.3.1 *Training programmes*

To provide the target groups with sufficient skill (s) needed for the practical application of skills relating to their professional responsibilities (Finegold, 1999; Moore & Hickox, 1999; Ball, 1999) required at the work place. This is to be achieved through vocational/competence-based programmes aimed at giving the learners ability to use skills to perform specific tasks in accordance to specified standards (Burke 1995; Hodkinson & Issitt 1995; Jessup 1991).

Field & Drysdale (1991) suggest on-the-job learning as one of the methods to provide the target groups with sufficient skills needed to perform their work. They refer to the term 'on-the-job' as training that is done at the workplace by an experienced worker, supervisor or sometimes by an expert or a trainer. In this way the learner attempts the competency under guidance. Any mistakes in technique are corrected, and the learner continues to practice under observation until a satisfactory standard has been attained. According to Rae (1997) this approach works most effectively with operations of a relatively routine and repetitive nature, although the same principles can be applied to higher level complexities of training.

3.2.3.2 *Curriculum content/subject matter*

The target group should be provided with curriculum on core skills and specialist skills in accordance to occupational standard practices and required specification for application on the job (Truelove, 1997). For example core skills and specialist skills relevant in occupational areas such as accountancy, agriculture, architecture, banking, education, health, prison etc.

3.2.3.3 *Pedagogic/learning approach*

Truelove (1997) argues that Kolb's learning cycle is irrelevant to practical training because generally the aim and objective of the learning cycle is to provide knowledge and understanding and not to provide competence. As suggested by Fletcher (1991), Field & Drysdale (1991), Truelove (1997) and Konrad (2004) the generic model adopts a competence-based learning approach because the aim and objective of the training is to provide the target groups with specific skills to perform specific tasks relevant to the required specifications for application on the job. To achieve the aims and objectives of training, the generic model adopts Brookes's (1995) competence-based learning approaches. They are four categories namely trial and error, instructed or being told, copying or imitating someone else and thinking for yourself. Firstly, trial and error is one of the traditional forms of practical learning activity which is also referred to as feedback to confirm if the attempt is successful or otherwise. Secondly, instructed/being told is a

prescriptive approach and puts trainer in the role of 'expert'. It relies upon the trainer to pass on the skills required. Thirdly, the copying or imitating someone else approach is dependent on the demonstrator providing a positive demonstration of the skill or task, i.e the correct way to do something. Finally the 'thinking for yourself' approach is also called reflection. The learning occurs when learners are encouraged to think about something that they have done, something they have attempted to demonstrate or some problems learner have tried to solve. Through this approach learner are able to reflect on what went right, what went wrong and *why* (Brookes, 1995).

Kolb's model deals with the different methods by which one gets to acquire knowledge through educational methodology that is structured. The contents of a particular lesson must be variegated to fit into the four dimensions. Brookes's method is more specific to the acquisition of competence for a particular skill. Brookes's approach though simplistic, is general and universal, and has a definite place on any learning model including that of Kolb.

3.2.3.4 *Mode of delivery*

A suitable mode of delivery of curriculum content or subject matter is essential to achieve the aims and objectives of occupational training. There are many methods of delivery as suggested by the literature review. The classroom/face to face, open learning, web-based learning, on-the-job learning, mentoring and coaching are suitable modes of delivery for the targeted groups to acquire skills on their specific work.

Open learning is a term used to describe courses flexibly designed to meet individual training requirements. Lewis (1986) and MacNay (1988) refers to open learning as the use of learning packages designed to impart work-related skills cheaply and with minimal support. Tight (1996) argues that open learning is about the removal of various barriers which he classified broadly into three groups:

i. physical/temporal: those restricting the time, place and pace at which learning may be undertaken;

ii. individual/social: those to do with the characteristics of individual learners (e.g. age, sex, ethnicity, class, wealth)
iii. learning: those to do with the nature of the learning provided (e.g. content, structure, delivery, accreditation and flexibility).

Open learning could facilitate training on specific skills by helping the target group overcome these barriers to their training.

On-the-job training takes place within the learner's actual working environment. According to Brookes (1995) historically the majority of training at skill level took place in this way. Learner learned their job by observing and imitation. The main objective of on-the-job training is to get the new operative up to production standard as quickly as possible. On-the-job training can be more effectively structured if training takes place in the context of occupational standards requirements. Brookes (1995) suggest two methods of on-the-job training: mentoring ('taking someone under your wing' to develop skills) and coaching (coaching by a manager, superior, experts).

Mentoring involves a close relationship between the instructor and the trainee. There is a sense of commitment and mutual respect between both parties. The mentor ensures the success of the programmes through personal supervision. The trainee derives satisfaction and a great sense of confidence from the relationship. Comparatively coaching relates to a specific skill, regardless of the larger and broader scope of responsibility associated with mentoring. Coaching could be carried out by the mentor himself, or by anyone else.

3.2.3.5 *Achievement*

Assessment on training completed by the target groups normally ended up with certificate of achievement or certificate of attendance awarded by the training organiser.

A simple diagrammatic presentation of these three dimensions of vocational and professional education and training are summarised in the generic model in Figure 5.5.

4. Conclusion

This chapter has examined the conceptual foundation of education and training. Three dimensions emerged from these two concepts namely (i) the context/driver for education and training, (ii) target to be educated and trained, and (iii) fulfilling the need for education and training. These dimensions were used to underpin the construction of a generic model of education and training. Subsequently, the concepts of vocational and professional education and training were examined and mapped against the generic model education and training in an attempt to construct a generic model of vocational and professional education and training illustrated in Figure 5.5. This framework was used to develop the generic model for vocational and professional education and training in ERM presented in Chapter Seven.

Figure 5.5. **Generic Model of Vocational and Professional Education and Training**

Dimensions	Education	Training
1. **Context/Driver** Establishing the need or necessity for vocational/professional education and training (aims and objectives).	The need for knowledge and understanding in the various occupational areas for: -personal reason: to earn a living; extension of formal education, both immediate and after a lapse of time, for personal development and interest. ***-professional development.*** (Jarvis 1985; Jessup 1990; Sheckleton 1990; Brookes 1995). ***-economic: occupational orientation to develop learners' job potential to meet the varying needs of business and industry.*** (Boffy 1990; Greenacre 1990; Rowarth 1990; Jessup 1990 & 1991; Herzog 1996; Raggatt & Williams 1999). ***:to raise the productivity and improve the flexibility and motivation of the labour force.*** (NCVQ 1990 in Hyland 1994; Rust 1992). ***:to overcome skill shortages which may develop and impede growth of innovation, and to ensure that there is sufficient education in emerging new skills.*** (Jessup 1990 & 1991; Hyland 1993; NCVQ 1990 in Hyland 1994; Finegold 1998).	The need of specific skill (s) required in the performance of a specific task (s) in the work place for: -personal reason: to enable employee to up-date and extend their skills and to develop through their working lives. ***-professional development.*** (Manpower Services Commission Report 1983 in Jarvis 1985). ***-organisational: to fulfill the need of organizations for different kinds of specially qualified employees to fulfill their specific tasks.*** (Fletcher 1991; Field & Drysdale 1991; Field 1999). ***:to raise the productivity and improve the employees' specific job performance.*** (Hyland 1994). ***:to ensure employees are equipped with sufficient training in new required skills; to adjust quickly and effectively to new specific methods, processes, products, services and technologies.*** (Field & Drysdale 1991; Brookes 1995; Rae 1997).
2. Target to be educated and trained	Those with the intention of joining a profession and practitioners in any occupation: -different types of players who perform different roles and responsibilities and -different levels of players. ***-tactical level*** ***-management level*** ***-supervisory level*** ***-operational level*** ***-technical level*** (Hyland 1994; Boydell & Leary 1996; Baker 1997; Yanakieva 2001	Categories of staff involved in work processes relating to their specific professional responsibilities: -different types of players who perform different roles and responsibilities and -different levels of players. ***-tactical level*** ***-management level*** ***-supervisory level*** ***-operational level*** ***-technical level*** (Hyland 1994; Herzog 1996; Truelove 1997)

Dimensions	Education	Training
3. **Fulfilling the need for education and training**	To provide the target groups with sufficient knowledge/understanding for the ultimate purpose of fulfilling their professional responsibilities through: -accredited programmes ***-validated by professional society/body.*** (Fletcher 1991; Rust 1992; Hyland 1994; Raggatt & Williams 1999).	To provide the target groups with sufficient skill (s) or competence needed for the practical applications of skill (s) relating to their professional responsibilities through: ***-vocational/competence based programme.*** ***-on-the-job learning.*** (Field & Drysdale 1991; Jessup 1991; Burke 1995; Hodkinson & Issitt 1995; Rae 1997).
	-curriculum content/subject matter: - modules: - core knowledge: -theory, principles and standard practices. -specialist knowledge (Joseph 1984; Lewis 1991; Wirth 1991; Hyland 1994)	-curriculum contents/subject matter: -modules: *-core skill (s)* *-occupational standard practices.* *-specialist skill (s)* (Truelove 1997)
	-pedagogic/learning approach: -knowledge-based: (Kolb's (1984) learning cycle: -concrete experience: learner personally involved in something and gains feedback. -reflective observation: feelings and thoughts emerging from reflection and analysis that generalisations or concepts may be generated. -abstract conceptualisation: from generalisations and conceptual understanding the new situation be tackled effectively. -active experimentation: the newly learned concepts must be tested out in new situations where the learner make a link between theory and action by planning for the action and carrying it out. (Kolb 1984; Rae 1997; Truelove 1997).	-pedagogic/learning approach: -competence-based: (Brookes's (1995) approach: -trial and error: traditional forms of practical learning activity. Also refer to as feedback to confirm if the attempt is successful or otherwise. -being told or instructed: prescriptive approach and put trainer in the role of 'expert', relies upon trainer to pass on the skills required. -copying or imitating someone else dependent on demonstrator providing a positive demonstration of the skill or task, i.e. the correct way to do something. -thinking for yourself/reflection: learning occurs when learners are encouraged to think about something that learner have done, some skill learner have attempted to demonstrate or some problems learners are able to reflect on what went right, what went wrong and *why*. (Fletcher 1991; Field & Drysdale 1991; Brookes 1995; Truelove 1997; Konrad 2004).

Dimensions	Education	Training
	-mode of delivery: -classroom/face to face. ***-distance learning.*** ***-web based learning.*** ***-independent study.*** (Glatter et al 1971; Holmburg 1986; Paul 1990; Shale 1990; Evan & Nation 1992).	-mode of delivery: -classroom/face to face. ***-open learning.*** ***-web based learning.*** ***-on-the-job learning:*** ***-mentoring.*** ***-coaching.*** (MacNay 1988; Brookes 1995; Tight 1996).
	-achievement: -accreditation. -academic modular/credit based qualification. ***-professional recognition.*** (Squires 1986; Ram 1989; Simosko 1991; Challis 1993; Walker 1994)	-achievement: -certificate of achievement. -certificate of attendance.

CHAPTER SIX

SURVEY FINDINGS OF NATIONAL ARCHIVAL INSTITUTIONS AND RELATED PROFESSIONAL ASSOCIATIONS

This chapter reports and discusses the findings of the survey questionnaire of the national archival institutions and related professional associations for administrators; archivists, information managers, IT specialists and records managers.

1. Introduction

The first aim of the study was to analyse international best practice education and training programmes in ERM for record keepers as suggested in this study. To achieve the first aim of the study, research needed to be undertaken to identify the various international education and training programmes through a survey of national archival institutions and related professional associations. Both surveys were carried out from 1st February 2002 to 28th February 2002.

2. Survey of the national archival institutions

In the survey of national archival institutions, 59 questions were asked to identify international best practice programmes, and the interest in education and training for record keepers who manage electronic records (refer to Appendix 2). The 59 questions yielded a better picture of the record keepers' levels of knowledge and skills in ERM, and how they acquired knowledge and skills to manage electronic records in their respective organisations. Questionnaire were sent to 24 archival institutions, but only eleven (46%) responded.

The responses indicated problems in the area of education and training in ERM. The problems were grouped into five categories: insufficient knowledge and skills in ERM, lack of coordinated skills training in ERM for the different record keepers, the mismatch between what is taught and what is needed, lack of clear and consistent policy on education and training, as well as partners involved in the provision of education and training. However, these may have changed now.

2.1 *Insufficient knowledge and skills in ERM*

A feature of the findings was the frequency with which the surveyed archival institutions reported that the levels of knowledge and skills among the administrators, archivists, IT personnel and the records managers were insufficient. The data revealed that the majority of the respondents (archival institutions) acquired and maintained electronic records physically; however, the levels of knowledge and skills among the record keepers were not sufficient to meet the needs of ERM in the respective institutions.

The National Archives of Canada, Finland, New Zealand, Norway, Poland and Sweden, for example, reported that their record keepers possessed such knowledge of IT as to allow them to manage electronic records. This was however thought to be rather limited as suggested by the National Archives of Canada, "they received knowledge of IT on specific applications and not specifically on the principles and technical aspects of electronic recordkeeping". On the other hand, the Ontario State Archives reported that "our record keepers received just-in-time training on recordkeeping technology from the vendors of the corporate recordkeeping systems". The rest of the surveyed archival institutions (National Archives of Netherlands; UK National Archives; as well as the New York and Ontario State Archives; and the Archives in Ireland) indicated that their record keepers lacked both knowledge and skills necessary for the management of electronic records. For instance, the UK National Archives specifically reported that, "those in charge of electronic records currently lack knowledge and skills in the principles of ERM, in particular electronic file plans and sustainability of electronic records". The National Archives of Ireland noted that "knowledge and skills of those concerned are lacking because of the absence of coherent policy on ERM in government". On the other hand, the New York Sate Archives indicated that, "most archivists and records managers have only enough knowledge to run their systems and they do not usually have skills in developing needs assessments, improving systems etc."

This was also true in the case of the public services in Ontario and Poland. The Ontario States Archives revealed that there was a wide variance in IT related knowledge of record keepers in the Ontario public service, "where records are generally recognised as vital in

some ways, for example land titles, those in charge normally possess knowledge of IT to manage these types of records". Similarly in Poland those record keepers in charge of the national database of births, marriages and deaths normally possessed adequate knowledge of IT to manage their respective database.

Another factor contributing to the record keepers' insufficient knowledge and skills on ERM as indicated by the Ontario States Archives was that "the body of knowledge required for those responsible has not been identified and defined responsibilities were not assigned. The UK National Archives suggested that "education and training on electronic records are fragmented and curricula vary widely between countries and within countries".

In the majority of cases, shared responsibility among the different record keepers was not evident as the different record keepers' knowledge and skills were still restricted to their core roles and responsibilities. According to the National Archives of Sweden, "the archivists are concerned with the preservation and theoretical aspects of archives". The National Archives of Poland reported that, "the administrators normally deal with management issues and programmes delivery". The Netherlands Archives argued that the administrators "are more concerned with business process design rather than issues relating to electronic records". This was further supported by a statement of the National Archives of Finland to the effect that "the administrators deal with organisational procedures and IT personnel are involved in active information and management of the systems".

2.2 *Lack of coordinated skills training in ERM among the different record keepers*

A majority of the surveyed archival institutions (seven of them) reported that emphasis was given to the training of archivists in IT and computer courses, in preference to training the different record keepers specifically in ERM. This was evident in the response of Finland where the training programmes for archivists were provided by the systems vendors. In Poland, the newly appointed archivists were trained by the experienced archivists. The National Archives in Ireland, New Zealand, Norway and

Sweden as well the New York State Archives reported that training programmes for archival staff in the area of IT and computers were available in the form of short courses, seminars, conferences, and workshops were provided occasionally by archival schools, system vendors and IT consultants.

By comparison, only the National Archives in Canada, Netherlands and UK, as well as the Ontario State Archives have developed new training opportunities in ERM for the different record keepers. The Netherlands National Archives provided training not only for the new staff and archivists but also for the IT personnel. However the different record keepers received their training in different places. The archivists received theirs in the archival schools, while the IT personnel were trained on digital preservation by commercial trainers. Only the new staff and archivists were given training in ERM at the Ontario State Archives. The new staff training "entails organisational approaches and procedures on ERM, whereas the archivists was given training in the application of technology related concepts to specialised areas such as data warehouse and Geographic Information Systems". By comparison the UK National Archives was more focused on the provision of skills training for the senior staff, records managers and IT personnel provided by the ERM Unit and on occasions by outside consultants. Training was concerned "with hands-on use of a pilot ERM system in a workshop environment".

Of those archival institutions which provided training in ERM, only the National Archives of Canada developed new training initiatives for the different record keepers. As reported, "new training programmes on ERM were developed for the new staff, senior staff, records managers, archivists, administrators and IT personnel provided by internal staff, mentors, consultants and vendors as appropriate". The training entailed on-the-job coaching and monitoring on electronic recordkeeping. But the data did not suggest that the different record keepers learned ERM under common training programmes.

2.3 *The training content did not match the needs*

The majority of archival institutions surveyed revealed their concerns over the content of training programmes which were considered either inadequate or in need of

improvement. The data indicated that in many instances, the training content was said to have sidelined the practical aspects of ERM. It was considered too conceptual and theoretical. According to the National Archives of Poland, "the training content was more on theory and concepts rather then transferring skills". The National Archives of New Zealand stated, "short courses and seminars are mainly organised to deliver concepts". The New York State Archives believed that "most of records managers and archivists trained in the universities and in their own agencies get little specific training in electronic records subjects". The National Archives of Norway admitted, "IT personnel in our department were given higher training in computer sciences." In the majority of cases, the curricular for the training of archivists and records managers concentrated mostly on IT subjects and computer systems and not specifically on ERM subjects. This is borne out by the National Archives of Poland which said that they had organised 54 IT and computer courses in 2001 for the archivists. In the case of the National Archives of Ireland, New Zealand, Norway and Sweden, archival staff were given workshops and short courses in IT by system vendors and IT consultants.

It is evident that although the majority of the archival institutions have increased the number of training to meet the ERM requirements, training providers found it difficult to keep up with the curricula. This was expressed by the National Archives of Sweden: "it is difficult to keep up with the perfect curriculum as this field is still emerging and changing rapidly". The National Archives of Canada, New York State Archives, Ontario State Archives, National Archives of Netherlands, UK National Archives and the National Archives of Sweden proposed that the technical aspects of ERM should be incorporated into the training curriculum. This would include the development and implementation of records/documents management applications, complete with robust file classification schemes and monitored implementation of retention requirements for the long term preservation of electronic records. The National Archives of Poland recommended the, "adoption of the Canadian Competencies Profile Standards and ISO 15489 as the core of a serious ERM training".

2.4 *Lack of clear and consistently applied policy on ERM education and training*

Data indicates that generally the archival institutions that responded to the survey did not have a clear and consistently applied policy with regard to education and training in the area of ERM. Instead the data suggested that the majority of the surveyed archival institutions issued regulations and guidelines to facilitate ERM. As stated by the National Archives of Norway, "there is no specific policy on education and training in ERM, but for those wishing to work as records managers and archivists in the government, they must follow a training course provided by the Norway Archives Academy". On the other hand the Ontario State Archives policy contained general matters on the provision of efficient training on recorded information. In the UK, general policy issues on education and training on ERM were based on the EG policy framework which emphasised the roles of the National Archives in helping departments with advice and guidance on ERM. As reported by the UK National Archives, "we came out with practical toolkits containing guidance on how to produce a corporate policy on electronic records; compile an inventory of electronic records collection; appraise the inventory, to manage electronic records documents using Office 97 on local area network, framework strategic planning and implementation, sustainable electronic records, strategies for the maintenance and preservation, and the management of electronic records on websites and intranets". Other then providing guidelines on the disposition of electronic records, the National Archives of Canada has "developed the Recordkeeping Competencies Profiles for government employees and guidelines for government departments for the provision of knowledge and skills in ERM". The rest of the archival institutions in Ireland, Poland, New Zealand, Sweden, the Netherlands as well as the United States (New York State Archives) reported that they did not have any policy for education and training of record keepers in their government.

2.5 *Partnership in the provision for education and training*

Six of the eleven archival institutions that were surveyed were involved in supporting tertiary educational programmes at the University level for record keepers responsible for the management of electronic records. There was cooperation between the National Archives of Netherlands and the Netherlands Archiefschool in developing a training

course in ERM since 1997 for senior records managers and archivists working in government and private organisations, as well as in archives. The course, which was started in 1997 consisted of a cycle of five days seminar. The data revealed that nearly 100 students had pursued the course. It had been evaluated and some adaptations made following students' and teachers' reactions and suggestions. In Finland the data suggested that "the National Archives Services has between 1997 and 1999, worked with the University of Tampere whose Department of Information Studies provides training in ERM through the E-Term project". The New York State Archives provided training in support of the universities' tertiary education through a variety of routes. It has been "supporting the development of records management certificate programmes in four community colleges across the state, but no particular model or programme has been developed specifically for the different record keepers as yet". On the other hand, the Ontario State Archives provided placement for the practicum component of archival programmes at the graduate level. It was stated that, "the Archives also recruits heavily among graduates of such programmes". In the UK, the National Archives has developed a partnership with two leading records management educators in the UK, namely the University of Liverpool and Northumbria in providing education and training not specifically on ERM but on information and records management through the rm3 programme. According to the response received, "this partnership offers a uniquely complementary set of records management experience and skills". It has developed a new training and education programme in records and information management for the benefit of government staff working with records.

Eight of the 11 archival institutions surveyed indicated that they collaborated with existing professional organisations in providing training for the record keepers. For example the National Archives of Canada worked with the Canadian Association of Archivists and ARMA.

The UK National Archives has professional relationship with the Society of Archivists of Great Britain (Records Management Group), the Records Management Society of Great Britain, as well as the Association of Commonwealth Archivists and Records Managers

(ACARM). None of the respondents had a professional relationship with any of the professional associations involving administration, information management or information technology specifically on education and training of record keepers in managing electronic records.

3. Survey of professional associations

Professional associations responded to twenty seven questions. The selected sample of professional associations was required to identify various associations that existed in the respective areas of archives management, records management, public administration, information management and information technology in relation to their role in providing education and training for record keepers in managing electronic records (refer to Appendix 1). As explained in detail in Chapter 4, the sampling strategy adopted for this survey involved sending questionnaires to 20 professional associations for archivists (of which only eight participated); seven professional records associations (of which five participated); 28 associations related to information management (of which nine participated); 16 associations in the field of IT (of which only five participated); and 26 associations involved with public administration (of which only four participated). The countries represented in the survey included Australia, Canada, Europe, UK and USA.

The analysis of results of the survey may be grouped into three categories: limited involvement of professional associations in providing education in ERM, lack of joint effort in providing education and training in the area concerned; and lack of practical training in ERM.

3.1 Limited involvement of professional associations in providing education and training on ERM

Among 31 professional associations that were surveyed, only seven indicated that they were involved in providing training in ERM. They were three archives associations, three associations of records management and one association of administrators. The professional associations in the area of records and archives were involved in the training of only the record practitioners and administrators. Surprisingly, the American

Association of Administrators was involved in providing education and training for the different record keepers defined in this study, although the training was specifically on "the overall management of law firm business process". The respondent reported that, "many of our trainers may belong to the ARMA". Subjects delivered included that of "knowledge management and the various strategies for the retention of records in both electronic and paper formats".

The three associations of archivists; and the three records management associations were considerably active in providing training. As reported by the Records Management Association of Canada, "we have monthly programme meetings with guest speakers including policy makers, product vendors, subject experts and frontline personnel, and a one day seminar with guest speakers from information management and records management areas". Subjects include best business practices, impact of IT on records programmes; information disposition; as well as current and new government policies and legislation that have a bearing on records and information management. On the intended target group for training, the association explained that the organisation "caters strictly to the records and information management community of the Federal Government of Canada" and that "all training, guidance and information provided to our membership must be relevant to the Federal Government's policies, procedures and legislation". On the other hand, the Records Management Group in UK has provided ERM training to records practitioners, but admitted that, "in the past training has been of a general nature to raise awareness of the issues involved". By comparison, the Australian Society of Archivists reported that it had organised one seminar so far, related to the recordkeeping aspects of web sites. The Records Management Association of Australia provided practical training on all aspects of managing electronic records including designing and implementing recordkeeping among the records, archives and information management community through seminars and short courses.

Of the seven associations surveyed, all of them admitted that there was lack of a unified training programme specially designed for the records keepers. Indeed, training was provided mainly on requests. This was because the associations had no specific policies

on education and training on ERM. However, the Society of Archivists in UK cited their general policy in terms of promoting the care and preservation of archives, and in terms of advancing the training of members with regard to all types of records. By comparison the Association of Administrators have a policy on accredited graduates programmes in the area of public administration. The policy guidelines call for training in IT. The UK Records Management Society responded to the question by indicating that it adopted EG policy framework, and therefore its training aims and objectives were tailored to support the EG policy. When asked whether the associations surveyed produced or published any guides for record keepers in the area of ERM, it was found that surprisingly the majority did not produce guidelines, which were expected to be issued by the central government agencies.

The response to the question on standards or benchmark on ERM education and training was significantly very low. It was not surprising that only the Association of Records Managers from Canada and UK responded to the question. The Canadian Association of Records Managers reported on the Core Competencies Profiles Standards developed by the National Archives of Canada (and adopted by the Treasury Board of Canada), as well as on the policy and position papers by the National Archives of Canada. The UK Records Management Society referred to the Standard for the management of public records developed by the UK National Archives in 1999.

3.2 *Lack of collaborative effort in providing education and training in ERM*

The data indicated that the majority of the surveyed associations were not involved in supporting any education and training programmes, either with academic institutions or existing professional associations in the respective countries. Out of 31 professional associations surveyed, only two records associations, i.e from Canada and UK were involved in supporting the tertiary records management programmes organised by universities in their respective countries. As the former reported, "we provide advertisement of records management courses and we encouraged our members to take part". The members of the records association in UK, often participated in the training programmes organised by LU, NU, Aberystwyth University and UCL.

Six professional associations (one association of administrators, two associations of archivists and three associations of records management) reported collaborating with other existing professional associations. The association of administrators worked in collaboration with ARMA. ARMA provided the association with guest speakers for the seminars and workshops. The two associations of archivists established links with records management associations from their respective countries to coordinate training programmes and avoid duplication of efforts. Two records management associations in Canada indicated that they worked with ARMA, Data Processing Institute, Canadian Libraries Associations and the Association of Canadian Archivists. One of the associations justified such collaboration by saying that "records management, library management and archival activities are all part of information management". The Australian Society of Archivists reported that it worked with the Records Management of Australia to deliver training activities.

Responses to question on partnership with archival institutions were not encouraging either. The findings revealed that only one society of archivists and one records association from UK and two records association from Canada were involved. The former explained, "SoA has key contacts within the UK National Archives in providing a two way flow of information. This allows events to be coordinated." One association of records management in Canada has established close relationship with the National Archives of Canada and the Treasury Board as these institutions were charged with developing and administering information management policies, procedures, guidelines and best business practices for the federal government. The association provided information to the community on upcoming events, policies etc. Another association indicated that, "we have the support of the National Archives of Canada which allows staff time to manage the professional organisation. It also makes available facilities such as meeting places and supplies".

It appears logical to expect, that those national archives which have been most active in developing standards such as the National Archives of Canada and the UK National

Archives tend to be well integrated and networked with other agencies both local and international, including professional associations.

3.3 *Lack of practical training*

The majority of the associations surveyed viewed the lack of practical training in ERM as an issue to be considered when designing and developing training programmes for the record keepers. One of the respondents indicated that presently training in ERM was still at the level of raising awareness of the issues with the relevant government bodies. Another respondent recommended the transition from a theoretically based training to practical training, with increased use of case reports. One society of archivists in UK cited the society's views on this matter, "as the majority of SoA members have traditionally been only involved with paper records and have had only limited exposure to electronic records, but with an increasing amount of contact with electronic records, more practical training will be needed". According to an information management society, "understanding current best practices for ERM, storage, formats and preservation would be the single most helpful kind of practical training we could have, but we lack people with practical skills to deliver the skill". Yet another stated that, "the key issues for us is getting staff who have the skills to provide the training – linking technical training with broad conceptual understanding of policy issues". In the words of the Records Management Association of Australia, "a mix of principles and 'real-life' examples, such as government agency case studies is important with hands on practical, testing and adapting". The UK Society of Archivists favoured, "introductory training sessions for those new to the subject with practical examples/case reports. More advanced training sessions/master classes/workshops detailing specific areas relating to electronic records such as metadata requirements". The association of records from Canada suggested the use of ISO 15489 and core competency standards as reference for developing education and training programmes in ERM.

Another issue that needs to be considered in this study is the provision of professional qualifications in ERM and the way it should be delivered. It is not surprising that this idea mostly came from the records and archives associations. One of them expressed,

"the need to have a professional qualification in ERM by offering a mix of face to face and distance learning; by combining the theory with practical examples". Another said that "professional qualification validated by professional associations is appropriate". An association from US opined that, "to make training attractive to the community and meaningful, a professional qualification program based on syllabus and measured by examination needs to be develop". An USA records management association suggested, "graduate school should teach the basic theory and principles, and professional organisations can provide continuing/advanced education and networking opportunities". Others suggested that general courses could be followed by in-house workshops, seminars, lectures by policy makers, product vendors and subject experts which address specific needs of the agency.

4. Content analysis from both surveys

The content analysis of data from the selected archival institutions and the selected professional organisations surveyed revealed that a theme consistent with the aims of the first phase of the study was emerging.

The factual data collected revealed that the selected archival institutions and the records and archives professional organisations were aware that even though there were training programmes provided for the record keepers, in the form of seminars, short courses, and conferences, through archival schools, and on a smaller scale through consultants, mentors, working groups, and vendors, the record keepers in question still lacked the requisite skills in ERM, as most of the time the training content did not match the need. Most of the training programmes delivered in the form of workshops, seminars, talks and briefings, were still at the awareness level and emphasised general concepts and theory. In most of cases, records practitioners were trained mainly through IT and computer courses. There was no training in ERM. There was a lack of coordinated skills training in ERM for the different record keepers, who were educated and trained separately. There was an absence of clear and consistently applied policy on education and training in ERM. As a result, in the majority of cases, there was no concept of shared roles and

responsibilities in drawing the different record keepers together in the pursuit of a common agenda in the area of ERM.

The respondents from both the surveys highlighted the absence of a corpus of knowledge required by the respective record keepers defined in this survey. Standardised model programmes were lacking. The curricula for both education and training was not unified, as they were designed and developed based on requests. The data suggests that the technical aspects of ERM needed to be incorporated into the training curriculum, which embraced the design, development and implementation of a complete record keeping system from creation to preservation. Even though the literature review on this issue suggested that the international archival communities are addressing the matter directly and comprehensively, there was not the same level of understanding and cohesion amongst records managers, administrators and the IT community.

A significant finding of the survey is that professional associations did not collaborate in providing education and training in ERM. By comparison, academic institutions and archival institutions were more actively and productively involved in developing specific education and training programmes. Three pragmatic examples in Europe and UK were identified through the survey of the national archival institutions- the Dutch FDSC, the e-TERM and the rm3 programme as the products of collaborative efforts of academic institutions in the UK and Europe.

Through this survey the selected archival institutions and the records and archives professional organisations expressed their interest in education and training in electronic records by suggesting that the core content of a serious training programme should be based on the ISO 15489 and the Canadian Competency Profile, and lead to a professional qualification. The data suggests that the technical aspects of ERM should be incorporated into the training curriculum with the inclusion of a complete recordkeeping systems design, development and implementation from creation to preservation. To cater for the working staff a mix and match mode of delivery to allow flexibility of

learning was also recommended. However, interest and activities in this area was very much lacking among the professional associations that were surveyed.

5. Conclusion

This chapter has been devoted to a discussion of the different types of education and training programmes available for key players in ERM across selected archival institutions and professional organisations in Australia, Canada, Europe, New Zealand, the UK and USA. The data did not reveal the existence of a universal model which embraced the various groups of record keepers defined in this study. Indeed little had been done in terms of education and training specifically for ERM, despite the push for EG in many of the countries surveyed. What exists is merely a combination of in-house, 'on-the-job' training programme combined with specialised courses. With regard to the education and training required to manage electronic records in government, there was no clear defined and accepted body of knowledge nor an agreed training curriculum, except for the pragmatic examples developed in Europe and UK. They are the e-TERM, the FDSC and the rm3 programmes. In addition one more programme - IMU in UK was identified by the latest literature review. To contextualise the findings of this survey within the main framework of the research, an analysis of the pragmatic examples is presented in the following chapter.

CHAPTER SEVEN

TOWARDS DEVELOPING A GENERIC MODEL OF VOCATIONAL AND PROFESSIONAL EDUCATION AND TRAINING FOR ERM

This chapter has two parts. The first part constitutes a critical analysis of the pragmatic examples that were identified in the literature review and in the findings of the survey presented in Chapter Six namely the rm3, e-TERM, FDSC and IMU education and training programmes. The second part presents the process of developing a generic model of vocational and professional education and training specifically for ERM which involves the mapping of the synthesis of the dimensions of the pragmatic examples against the generic model of vocational and professional education and training presented in Chapter Five.

1 Critical Analysis of Pragmatic Examples

1.1 Introduction

The qualitative data collected in the second phase of the study aims at gaining a deeper understanding of the pragmatic examples of education and training programmes which were identified earlier in the first phase of the study. The objective was to explore and discover the underlying concepts or key elements of the pragmatic examples, and to map them against the generic model of vocational and professional education and training presented in Chapter Five in order to develop the generic model of vocational and professional education and training specifically for ERM.

The qualitative data was derived from face to face interview sessions with three educators and trainers on records management (see Appendix 3). The interviews were conducted in May and November 2002. Two were from the National Archives of UK, and the other was from NU. They were involved in designing, developing and delivering the pragmatic examples (the e-TERM, FDSC, rm3 and the IMU). Documentary evidence was also used to support the argument in this analysis. The following analysis provides answers to the research questions in the second phase of the study pertaining to education and training programmes for ERM developed for the record keepers defined in this study:

- What are the characteristics of the pragmatic examples of education and training programmes?

- What are the underlying concepts underpinning the development of the pragmatic examples of education and training programmes?

1.2 *Characteristics of the pragmatic examples*

Data from in-depth interviews and document content analysis revealed that the pragmatic examples were developed to meet the needs of the individual or that of the professions which the programme was meant to satisfy. The analysis has identified the following characteristics of the pragmatic examples.

1.2.1 *Aims and objectives*

The main aim of the e-TERM, FDSC, and the IMU programme is to provide a useful forum for bringing together records practitioners (records managers and archivists) with other key players such as IT personnel and administrators as required by the electronic environment. Such an environment requires the different key players to work together to perform new roles and responsibilities on electronic records management. These new roles and responsibilities are related to ensure the integrity, reliability and authenticity of electronic records as evidence of business transactions.

The FDSC training programme run by the Archiefschool of the Netherlands was designed to enable records managers and archivists from the public sector to acquire knowledge and competence on electronic records [FDSC publicity material, 2004]. e-TERM was a training programme which provides intensive courses for archivists, records managers, IT specialists and administrators. It emerged from the RECPRO (European Records Management Programmes) curriculum and the FDSC. It sought to develop a common European framework model for electronic records education and training. On the other hand the FDSC provides a successful framework model for education and training in the area of electronic records management in the Netherlands. e-TERM differs from the

FDSC in the sense that "e-TERM is more pragmatic by the fact that it offers flexibility of programme delivery by open and distance learning to better meet the needs of working practitioners" [NU1I02-18/05(30)]. Even though the central themes and orientation of e-TERM are not related to the EG context, they draw on activities in Germany, Finland, Italy, the Netherlands, Portugal and the United Kingdom [NU1I02-18/05(36)], [http://www.ucl.ac.uk/e-term/index.htm (28 October 2002)].

The Information Management University (IMU), part of AIIM Europe provides a four day training programme with the idea of bringing the different stake holders to gain knowledge and skills in electronic records management. The context of IMU is the EG target for electronic management of records in 2004 along with Freedom of Information and e-service delivery in 2005 [IMU 2004 Prospectus]. The target participants are the different stake holder groups [NU1I02-18/05(50)].

In contrast to the main aim of the previous two programmes, the rm3 programme was designed and developed mainly to professionalise records management in the UK government. It offers to meet the needs of those who follow a permanent career in records management with the government; those who would want to stay with records management temporarily before moving on to other types of job and also those interested in individual training [NU1I01-18/11(45)]. Regarding this issue, the data from the UK National Archives suggested, "there was not enough expertise because the records management cadre in government was not functioning professionally enough" [UKNA1I01-14/11(87)]. The rm3 programme provides both day training sessions but the main focus was on the Certificate and the Diploma in Professional Studies in Records Management, information and records management as part of the move in central government to raise the status of records management, and professionalise it in anticipation of EG, National Archives Act and the Freedom of Information Act. But according to the interview data, the rm3 programme in its current form is not exclusively aimed at managing electronic records, unlike e-TERM and IMU which focus on the electronic environment [NU1I01-18/05(64)].

1.2.2 *Participants of the programmes*

The pragmatic examples were developed to target different types and levels of participants as ERM requires staff from all levels and areas of an organisation to appreciate their respective roles and responsibilities as creators and users of electronic records [NU1I01-18/05(99)].

Even though everyone in an organisation has to take responsibility for records management, the examples of pragmatic programmes emphasised certain groups of key players or stakeholders such as records management professionals (records managers and archivists), administrators and systems specialists (IT personnel). Each of these target groups has a different combination of responsibilities related to ERM but some are shared [NU1I01-18/05(101)]. The target groups of the rm3 programme are from the supervisory and tactical levels, rather then the managerial and operational levels. However, more operational staff have begun to enroll with the rm3 programme with a view to career expansion [UKNA2I01-14/11(60)], [NU1I01-18/05(129)].

The e-TERM, FDSC and the IMU programme participants are mainly from the tactical, managerial and supervisory levels as staff at these levels had very specific and practical needs in relation to electronic records [NU1I01-18/05(150)]. Participants at the tactical level needed to know about ERM and to get involved because ERM needs high level support in the form of policy and implementation. Likewise, the managerial level also needed to get involved as they are concerned with the organisation's functions, activities and business processes, and require support in terms of policy and guidelines at a more strategic level. On the other hand, those at the supervisory level are likely to be seeking procedures and practices to support the staff who are involved in creating, utilising, distributing, storing, retrieving and maintaining electronic documents and records in filing systems [NU1I01-18/05(160)]. By providing knowledge and skills on ERM through the different target groups at the different levels, the pragmatic examples' approach is to address ERM issues from the top to the bottom of organisations as

individuals have the power to create, distribute and retain or destroy documents, some of which are records.

1.2.3 *Fulfilling the aims and objectives*

1.2.3.1 *The nature of the programmes*

The pragmatic examples provide different types of education and training programmes for the target groups, for them to be able to fulfill their professional responsibilities in regard to electronic records in their respective work places.

The e-TERM is a European dimension in vocational training for archivists, records managers, administrators and IT personnel. It has included professional development programmes and life-long learning objectives for the target groups to acquire new knowledge and skills in ERM by adapting the methods and content of existing vocational training in records and archives management to incorporate new technological developments (Shepherd, 1999). The e-TERM include a one week vocational and competence based on-the-job learning programme aiming to deliver skills needed for the practical applications relating to professional responsibilities for electronic records. In Portugal the e-TERM programme was adopted as a basis for the undergraduate degree course, while in Germany it was adapted as part of a distance learning programme through e-delivery [NU1I01-18/05(13)]. On the other hand, FDSC and IMU provide the participants with learning experience that runs as five single days of seminars. The FDSC programme are offered at intervals of two to three weeks where, in between, participants were asked to read and prepare assignments. The whole package of FDSC takes about three months to complete (Shepherd, 1999).

In contrast the rm3 programme differs from that of the first three programmes. It is an instructional educational programme which combines both archival and information management perspectives on records management [rm3 2003- 2004 Prospectus]. The programme includes a day-long workshop for each module, which can also be followed as a standalone training day, combined with learning materials. Unlike the target participants of FDSC and e-TERM, rm3 programme students come from different levels

of recordkeeping responsibility, different stake holders and record keepers groups such as administrators and records staff across central government departments and government agencies of greatly varied size and culture [UNN1I01-14/11(15)], [UKNA2I01-14/11(44)], [[http:www.liv.ac.uk/lucas/b02.htm].

1.2.3.2 *Curriculum contents/modules or subject matter*

The implication of the curriculum approach is that there is a course to be followed and objectives to be aimed at. This draws upon the idea of planned intentional learning as in the case of the pragmatic examples. Common intentional learning elements in the pragmatic examples are the provision of core knowledge, specialist knowledge, core skills and specialist skills in the various different education and training modules.

The synthesis in Figure 7.1 of the curriculum contents shows that theory, principles and standard practices on records/archives and information management form the core and specialist knowledge required for the target groups to perform their new roles and responsibilities specifically on electronic records provided by the e-TERM, FDSC and IMU programmes [Prospectus and documents of the various programmes]. In contrast the rm3 programme provides core knowledge and specialist knowledge for the target groups to manage all types of records regardless of their format because rm3 education and training programme was developed in accordance to the requirements of the UK National Archives Act emphasising records management in the government context [http:www.liv.ac.uk/lucas/b02.htm].

Among the pragmatic examples, e-TERM lays the strongest foundation for building partnership among records managers, archivists, IT personnel and administrators as the idea of building partnership is inherent within the curriculum or the subject content design with a specific preliminary subject entitled 'Building Partnership'. This subject aims at teaching concepts to non-recordkeeping professionals particularly for the administrators and IT people who are not familiar with recordkeeping concepts; and imbibing non-ICT professionals with concepts and trends in ICT [NU1I01-18/05(153)].

Figure 7.1. Synthesis of pragmatic examples of education and training on ERM.

Dimensions	Pragmatic Examples Programmes			
1.0 ***Aims and objectives***	**e-TERM**	**FDSC**	**rm3**	**IMU**
1.1 Building partnership	✓			✓
1.2 To provide target employee with required new knowledge and skills in order to perform new roles and responsibilities	✓	✓	✓	✓
1.3 To enable employee to up-date and extend their knowledge and skills through their working lives/personal development	✓	✓	✓	✓
1.4 Economic reason – develop learners' job potential to meet the varying needs of business and industries in emerging new skills.	✓	✓	✓	✓
1.5 Organisational reason – to fulfill the need of organisation	✓	✓	✓	✓
1.6 For professional development	✓	✓	✓	✓
1.7 Professionalisation of the records management work across government			✓	
1.8 EG			✓	✓
1.9 Electronic environment	✓	✓	✓	✓
1.10 Administrative demands for integrity, reliability and authenticity of records	✓	✓	✓	✓
1.11 Archival legislation (UK National Archives Act.)			✓	
1.12Freedom of Information Act.			✓	✓
2.0 ***Participants of the programmes/Target groups***				
2.1 Different types of players: archivists, administrators, records managers and IT personnel.	✓	✓	✓	✓
2.2 Different roles and responsibilities: archivists', administrators', records mangers' and IT personnel.	✓	✓	✓	✓
2.3 Different levels of players:				
2.3.1 tactical	✓	✓	✓	✓
2.3.2 management	✓	✓	✓	✓
2.3.3 supervisory	✓	✓	✓	✓
2.3.4 operational			✓	

Dimensions	Pragmatic Examples Programmes			
3.0 ***Fulfilling the aims and objectives***	**e-TERM**	**FDSC**	**rm3**	**IMU**
3.1 Programmes:			-	
3.1.1 Accredited			✓	
3.1.2 Validated by professional body			✓	
3.1.3 Competence based (vocational)	✓	✓	✓	✓
3.1.4 On-the-job learning	✓	✓	✓	✓
3.2 Curriculum content/subject matter/modules: 3.2.1 **Core knowledge**				
3.2.1.1 theory, principles and standard practices on records, archives and information management	✓	✓	✓	✓
3.2.1.2 introduction to records and information management; principles and tools for managing records; principles and tools for information storage; retrieval and access; principles of appraisal and preservation.	✓	✓	✓	✓
3.2.1.3 solid grounding in records management principles and practices and understanding of the role records play in supporting organisational objectives as well as legal and other regulatory requirements.	✓	✓	✓	✓
3.2.1.4 core knowledge for records managers, archivists, administrators and IT personnel to perform new roles and responsibilities.	✓	✓	✓	✓
3.2.2 **Specialist knowledge**				
3.2.2.1 building partnership: recordkeeping concepts for non-record professionals; concepts and trends in ICT for non-ICT professionals; concepts and trends in business operations.	✓	✓	✓	✓
3.2.2.2 impact of ICT on recordkeeping.	✓	✓	✓	✓
3.2.2.3 the business perspective.	✓	✓	✓	✓
3.2.2.4 design and implementation of recordkeeping systems.	✓	✓	✓	✓
3.2.2.5 records management policy.	✓	✓	✓	✓
3.2.2.6 strategic organisation drivers.	✓	✓	✓	✓

Dimensions	Pragmatic Examples Programmes			
	e-TERM	FDSC	rm3	IMU
3.2.3 **Core skills**				
3.2.3.1 occupational standard practices on electronic records management, archives and information management.	✓	✓	✓	✓
3.2.3.2 work processes to protect the interest of archives in a digital environment.	✓	✓	✓	✓
3.2.3.3 core skills for the target groups to perform new roles and responsibilities.	✓	✓	✓	✓
3.2.4 **Specialist skills**				
3.2.4.1 design processes and implementation of electronic recordkeeping systems.	✓	✓	✓	✓
3.2.4.2 electronic records survey and scheduling; archives and permanent preservation; legal issues; ICT; users services and user relations.	✓	✓	✓	✓
3.2.4.3 work processes for electronic records for long term preservation.	✓	✓	✓	✓
3.2.4.4 skills to help records managers and archivists to become specialists who can engage from the earliest possible moment in defending the interest of record keeping and archiving in the organisation.	✓	✓	✓	✓
3.2.3 Pedagogic/Learning approach				
3.2.3.1 Knowledge-based: Kolb's (1984) learning cycle.	✓	✓	✓	✓
• concrete experience: learner is personally involved in something and receive feed-back.	✓	✓	✓	✓
• reflective observation: feelings and thoughts emerging from reflection and analysis so that generalisations or concepts may be generated.	✓	✓	✓	✓
• abstract conceptualisations: from generalisation and conceptual understanding the new situation may be handled effectively.	✓	✓	✓	✓
• active experimentation: the newly learned concepts are tested out in new situations, where the learner makes a link between theory and action by planning for the action and carrying it out.	✓	✓	✓	✓

Dimensions	Pragmatic Examples Programmes			
	e-TERM	FDSC	rm3	IMU
3.3.2 Competence-based: Brookes (1995) approach:	✓	✓	✓	✓
• trial and error: traditional forms of practical learning activity. Also refer to feedback to confirm if the attempt is successful or otherwise.	✓	✓	✓	✓
• being told or instructed: prescriptive approach which places trainer in the role of 'expert', relies upon trainer to pass on the skills required.	✓	✓	✓	✓
• copying or imitating someone else dependent on demonstrator providing a positive demonstration of the skill or task, i.e. the correct way to do something.	✓	✓	✓	✓
• thinking for yourself/reflection: learning occurs when learners are encouraged to think about something that he/she has done, that some skills, learner has attempted to demonstrate or that which some problem learners are able to reflect on what went right or what went wrong and *why.*	✓	✓	✓	✓
3.4 Mode of delivery				
3.4.1 classroom (face to face)	✓	✓	✓	✓
3.4.2 distance learning	✓	✓	✓	
3.4.3 web-based learning	✓	✓	✓	
3.4.4 independent study			✓	
3.4.5 on-the-job learning: • coaching • mentoring			 ✓ ✓	
3.5 Achievement				
3.5.1 accredited modular/or credit based qualification.			✓	
3.5.2 professional recognition.			✓	
3.5.3 certificate of attendance.	✓	✓		✓
4.0 ***Conceptual underpinnings***				
4.1 Educational concept	✓	✓	✓	✓
4.2 Training concept	✓	✓	✓	✓
4.3 Pedagogical concept	✓	✓	✓	✓

In addition concepts and trends in business operations were also taught [e-TERM web site]. Other than providing the different target groups with an understanding of the various concepts, the main emphasis of this particular subject is to provide a basis for collaboration between the different target groups [Horsman, 2001].

The element of building partnerships is not explicit and is not included in the rm3 programme, as its main aim is to professionalise records management in the UK government as its main focus is the records management staff. Similarly with the FDSC, the element of building partnerships was not significant because the main aim of the programme is to support the conversion of the records professionals from the traditional to the new perspective [FDCS publicity documents]. e-TERM presents a contrast in that the element of building partnerships among the key players as the target groups of the programme was totally explicit. Building partnership constitute one of the main aims of the e-TERM programme, as the target groups were selected from different groups of key players. This element of building partnership has a trans European dimension which does not appear in other education and training programmes for records management [NU1I01-18/05(147)].

The core and specialist skills of the pragmatic examples as illustrated in Figure 7.1 aim at assisting the target groups, especially records managers and archivists, to become specialists who are able to defend the interest of recordkeeping and archiving in organisations. This is evident where all the pragmatic examples provide core skills based on work processes for electronic recordkeeping for long term preservation in accordance to occupational standard practices under the various different subjects. For example, the core skill is provided by the e-TERM under 'The Impact of ICT on Recordkeeping, the Recordkeeping Perspective, the Business Perspective and the Records Management Policy'. The specialist skills is provided by 'The Design and Implementation of Record-keeping Systems' [e-TERM document and web site]. On the other hand, the rm3 programme subjects on core skills are provided in the 'Legal Issues, Information and Communication Technologies and User Services and User Relations'. Subjects on specialist skills are provided in the 'Records Survey and Scheduling, Archives and

Permanent Preservation and Electronic Recordkeeping'. In the IMU programme, the subjects on core skills and specialist skills are provided through two courses. The core skills are imbibed through the subject entitled "Strategic Organisational Drivers and Records Management and the Business" whereas the specialist skills are provided via "Developing the Business Case and Specifying the Requirements and Implementation" as illustrated in Figure 7.1.

Even though the various modules or subject titles of the pragmatic examples vary considerably, the aims and objectives of the modules are similar, that is to support the migration of the recordkeeping professional perspective from traditional "lifecycle" perspective to a "new" recordkeeping perspective. This change in perspective is reflected in: the various modules which are multi-disciplinary and integrated; process orientation, dealing with digital documents and contexts; and record keepers operating at the front end with different functions but with similar concern.

1.2.3.3 *Learning approaches*

The interview data revealed that all the pragmatic examples have clearly identifiable learning outcomes which include both knowledge and skills which are based on the relevant pedagogic or learning approaches through embedding theory in practical case studies (Shepherd, 1999).

In the rm3 programme, the combination of knowledge and skills acquisition is much more extensive compared to the other three programmes because these are combined with practical activities. This is supported by the data provided by the educator and trainer of the rm3 programme who mentioned in the course of an interview, that she teaches information and communication technologies where skills training was carried out in the laboratory where students learned about a particular software product. This is similar to the e-TERM pilot project which included practical sessions in the laboratory as part of the learning process. Students were set practical tasks either individually or in groups. So there was a combination of both knowledge and skills [NU1I01-18/05(108)].

There was the same process of combination of knowledge transfer and practical activities in the delivery of the IMU programme, but this was limited to practical demonstration presented by software suppliers [NU1I01-18/05(118)]. By comparison, the pedagogical character of FDSC is based on four dynamic learning cycles, consisting firstly of preparatory reading on ERM; secondly discussion of theory related to practice; thirdly application of theory to the cases; and finally application of skills and knowledge acquired to daily on-the-job practical problems (Laeven, 1999a). This cyclic learning and problem solution approach enables effective transfer of knowledge and skills to the participants. However data from the evaluation report reveals that the success of the programme was hampered by the lack of on-the-job facilities to demonstrate the application of knowledge and skill to daily practical problems. In this case, a stronger problem orientation is needed to improve the pedagogical cyclic approach (Laeven, 1999b).

1.2.3.4 *Mode of delivery and achievement*

Other then the traditional classroom face to face sessions, the pragmatic examples employed a variety of deliver mechanisms and approaches such as open learning, distance learning, web based and on- the- job learning.

The interview data with the UK National Archives staff revealed that the rm3 programme utilised the concept of open learning to facilitate flexibility in training by helping the learners to overcome some of the barriers in learning. For example, it provides the participants with flexibility in acquiring knowledge and skills through accredited academic programmes tailored to meet the needs of the following three categories of staff in the UK government: firstly, those who would permanently stay with the government in their records management vocation; secondly, those who would want to stay temporarily before moving on to other types of job; and thirdly, those simply wishing to undergo individual training [UKNA1I01-14/11(122)], [UKNA2I01-14/11(89)].

The open learning concept was also adopted by the e-TERM programme in Germany which was stimulated by the impact of learning technology. In this case, the participants were engaged in varying amount of private or independent study on their own, and away from the direct influence of the teacher or instructor by utilising the e-delivery methods. They used course text together with the support of internet facilities. The web based method was also used in e-TERM in which text resources such as full text of articles were brought together in a single place for access in the public domain [NU1I01-18/05(87)] [http://www.ucl.ac.uk/e-term/index.htm (28 October 2002)]. These methods of delivery removed the barriers pertaining to physical and temporal factors restricting the time, place and pace at which learning may be undertaken (Tight, 1996). Similarly, other than the conventional method, the FDSC also includes open learning, distance learning and eventually 'webisation' in their future plan for further innovation (Laeven, 1999).

In the IMU programme, participants were brought together to collaborate for a week on deepening their knowledge and developing their skills in the classroom in the face to face mode. They were assessed at the end of the week through a formal presentation [NU1I01-18/05(50)]. Similarly with other pragmatic examples, at the end of the day, participants were awarded with certificates of attendance except that of rm3 students whereby students are awarded academic credit based qualifications upon completion of the certificate or diploma course which are professionally recognised. For a certificate, candidates need to complete four core modules, and for the Diploma they need to complete four core modules and six specialist modules. In addition, the rm3 short courses offer the opportunity to complete a study exercise (half a day's private study), after which a certificate of attendance is awarded [http:www.liv.ac.uk/lucas/b02.htm (20 February 2005).

1.3 Underlying concepts underpinning the development of the pragmatic examples of education and training programmes

The analysis of data from the interviews and document content explored several interrelated concepts underpinning the pragmatic examples programmes. The concepts

are related to education and training; pedagogic approach; knowledge as well as competence.

1.3.1 *Education and training concepts*

The e-TERM provides a very rich learning environment in combination with the RECPRO curriculum and some additional training elements from the Dutch Seminar Cycle. The e-TERM has a strong pedagogical underpinning because it provides materials and framework which could then be used as part of both education as well as training programmes. In Portugal the e-TERM framework was used as the basis for developing a new undergraduate degree course, while in Germany, a distance learning programme for archivists was designed for training purpose [NU1I01-18/05(30)]. The implication is that the e-TERM was underpinned by education and training concepts to provide the European market with various alternatives that provide flexibility for the participants to acquire knowledge and skills on ERM.

The IMU programme, being the Information Management University programme, provides the document management road show through the IMU expo every year with the intention of monitoring the happenings in business in terms of information management, information spectrum, enterprise content management, document management and records management. As part of the activity, IMU has identified the need for a training programme with the possibility of it becoming part of attracting academic credit in the near future. IMU has strong training elements, which has the potential to become an integrated part of the education programme (NU1I01-18/05(40)].

By comparison, the rm3 programme is prescriptive, designed and developed by LU and NU for the National Archives to professionalise the records management job in the UK government. It was for this reason that rm3 was intended to be a programme with an education underpinning within the context of the certificate and diploma courses delivered by NU and LU and training elements in its day training sessions [UNKA1I01-14/11(140)], [NU1I01/18/05(56)].

1.3.2 *Pedagogic concepts*

The qualitative data from the interviews and document analysis revealed that the pragmatic examples programmes were underpinned by several pedagogic concepts based on the elements of the 'training purpose' and 'education purpose'. These are reflected in the curriculum design and were developed with the specific aim of providing knowledge and skills for the target groups to manage electronic records.

Within the context of the certificate and diploma courses, rm3 programme is underpinned by both knowledge-based and competence-based learning as evident from the learning outcomes which include both knowledge and skills. In an interview with her, the educator and trainer of the pragmatic examples said that,

> "...because the rm3 programme is much more extensive, the combination of knowledge transfer and knowledge acquisition are combined with practical activities in skills. For example in the unit module which I teach on information and communication technologies, part of that training day is done in the laboratory where students learn about a particular software product [NU1I01-18/05(110)].

Similarly the e-TERM, FDSC and IMU programmes also include both knowledge and skills in their clearly identified learning outcomes. In the case of the e-TERM and the FDSC, practical sessions were provided in a laboratory as part of the learning process. Even though the IMU did not provide the participants with any lab work, they were provided with demonstration from software suppliers on ERM [NU1I01-18/05(121)], [http://www.ucl.ac.uk/e-term/index.htm (28 October 2002)].

Analysis of documents pertaining to curriculum learning objectives and subject areas of pragmatic examples suggests that the participants were personally involved in the records management process and gained feedback from their teachers during the hands-on practical work in the laboratory. On the other hand, classroom learning involves analysis of the various concepts related to ERM. Through conceptual understanding, the participants were expected to be able to perform their new roles and responsibilities

effectively. Finally the newly learned concepts were tested out in new situations where the learner made a link between theory and action by planning for the action and carrying it out. This is evident through the 'case base' approach used by the pragmatic examples [NU1I01-18/05(21)]. The 'case base' approach provided a range of examples of case studies that were used as teaching examples with the aim of completing the learning process. In this case the learners were provided with a specific context in which to apply the generic principles that they had learned earlier. This evidence is supported by qualitative data derived from interview with the educator and trainer of the pragmatic examples,

> "...there was one case which was the Finnish, the police force in Finland. There was information about how the police force in Finland were managing their records. Thus, students having learned about different aspects of managing records could then look at how this Finish police force were doing it in making assessment whether they were doing it well, whether they were applying the principles . So it was a case example of organisation." [NU1I01-18/05(73)].

The learning process of the pragmatic examples fits into Kolb's knowledge-based learning cycle (1984) (as explained in Chapter Five) in which the participants went through four cycles of learning, namely concrete experience, reflective observation, abstract conceptualisation and finally active experimentation.

Through the knowledge-based learning cycle the participants in all the pragmatic examples programmes, were personally involved in doing some written exercises on the subjects learned on ERM and gained feedback from the facilitator. From the learning experience and the thinking process that was involved, participants were expected to understand the various theory and concepts on ERM. From the conceptual understanding the participants were expected to be able to perform their roles and responsibilities effectively when the newly learned concepts on ERM were tested out in their respective organisations (Kolb, 1984).

Other then applying the knowledge-based concepts, the pragmatic examples programmes were also designed to improve skills or performance on-the-job. Thus the concept of on the job learning through competence-based approach was also evident in the pragmatic examples. Within the context of the educational programmes of the rm3 certificate and diploma courses, each student was expected to have a mentor in his or her work place. Each student was assigned to one of the course tutors, but he or she also do have a mentor within their organisations. However this was not the case for the e-TERM and the FDSC. These programmes focused on providing a range of resources, methods and approaches that could then be used as appropriate education and training programmes in ERM. These three programmes did not explicitly address the issue of mentoring but there were some elements of coaching in the practical hands-on activities. Similarly with the IMU programme where the interview data suggested,

> "Again with the Information Management University, although there is the hope that there will be possibility of accrediting the learning, at the moment you could call it simply an intensive one week training course and therefore found there wasn't the need for an academic tutor or a professional tutor in the work place. Their learning experience was confined to the period that they spent with us during the training course. Similarly for the e-TERM, it was confined to the time that the participants were with us for the one week we did the pilot programme. But as for the rm3, every one is expected to have a mentor." [NU1I01-18/05(105)].

The practical activities and the case based approach of the pragmatic examples were underpinned by the competence-based learning concepts. During the acquisition of skills in the laboratory and also in the case base environment, the participants were involved in trial and error activity, being told or instructed, copying or imitating the demonstrator or facilitator and reflection. The reflection learning concept is very evident in the case based activity where learners were given the opportunity to demonstrate some of the skills that they had acquired. In this case learners were expected to be able to reflect on what went right and what went wrong (Brookes, 1995).

1.4 Findings based on critical analysis of pragmatic examples

Overall the findings from the in-depth study of the pragmatic examples derived from the interviews and document content analysis has revealed the importance of recognising the body of knowledge which people working in records management need to have to provide the theoretical underpinning for what they do. The pragmatic examples then were designed and developed to provide the theoretical underpinning for the acquisition of particular knowledge, skills, practical operation and expertise that need to be developed among the different record keepers.

The e-TERM, funded by the Leonardo de Vinci programme [http://www.ucl.ac.uk/e-term/index.htm (28 October 2002)] is a completed project with education and training underpinning which will be used for future bid to develop range of learning materials covering the European market. The strength of the e-TERM was bringing together the different stake holder groups through the element of building partnership which would help to consolidate in the development stage of records management as professional activities by providing a very rich learning environment. On the other hand the IMU and the FDSC provided highly participative learning opportunity which helped people to work through the process of specifying and designing the ERM and implementation for their organisations.

The rm3 programme is a prescriptive education and training underpinning from the UK National Archives about what they want to be covered in term of knowledge and skills. It has considerable strength, because not only does it harness the academic experience and expertise of course tutors, it also gives the tutors the opportunity to visit the central government departments so that they understand better what is happening on the ground in terms of records management activities in central governments. The information gained from such activity was used to improve the programme to meet the particular requirements of central government. However the rm3 programme does explicitly address the particular requirements of the hybrid environment but not fully the electronic environment [http:www.liv.ac.uk/lucas/b02.htm (1 March 2004)].

From the above analysis it is apparent that the pragmatic examples are underpinned by a range of different kinds of education and training concepts to provide a suitable and flexible opportunity for the different record keepers to gain the required knowledge and skills. The pragmatic examples provided an opportunity for people to study records management as an extension of their formal education, both immediate and after a lapse of time to cater the existing situation whereby people did not choose to become records managers as a professional activity rather then getting to the role first and then become professional.

2. Generic model of vocational and professional education and training for ERM

2.1 The process of constructing the generic model of vocational and professional education and training for ERM

The step by step mapping process of the pragmatic examples (IMU, e-TERM, FDSC and rm3) against the generic model of vocational and professional education and training (presented in Chapter Five) was based on comparison of the three dimensions of education and training of the generic model, namely the context/driver, target to be educated and trained and fulfilling the need of education and training. In the process only three categories of elements were considered to be the elements for the generic model of vocational and professional education and training for ERM. These are: (a) those common elements of the pragmatic examples that match the generic elements, (b) non common elements that match generic elements and (c) new elements that are common to the pragmatic examples.

2.1.1 *Mapping/Comparison of pragmatic examples against the generic model of vocational and professional education and training.*

Figure 7.2. **Context/Driver**

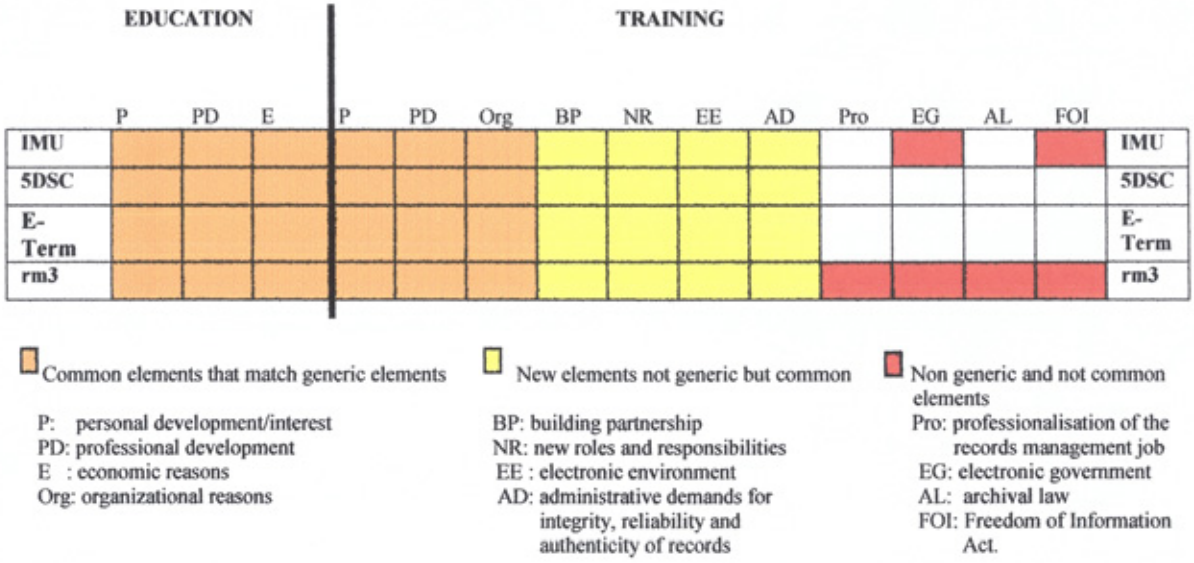
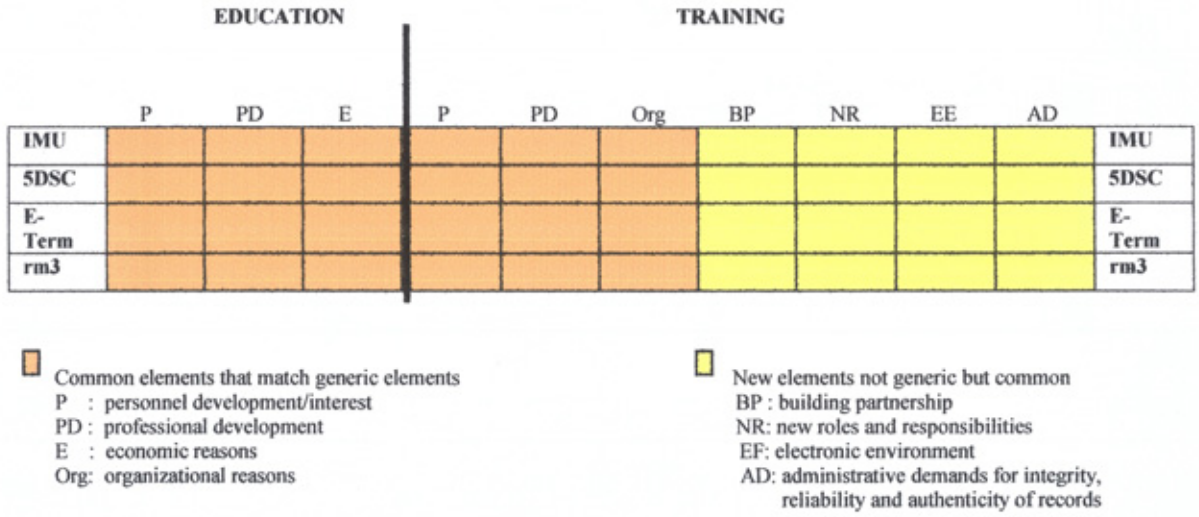
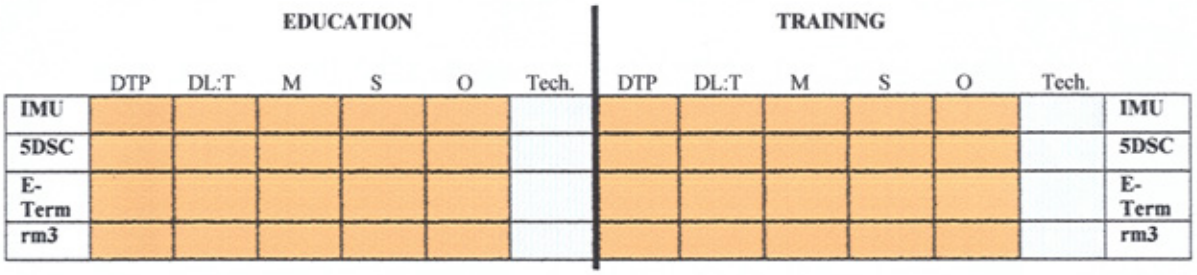


Figure 7.3. ***Generic model elements for ERM***



2.1.2 *Mapping/Comparison of pragmatic examples against the generic model of vocational and professional education and training.*

Figure 7.4. **Target to be educated and trained**



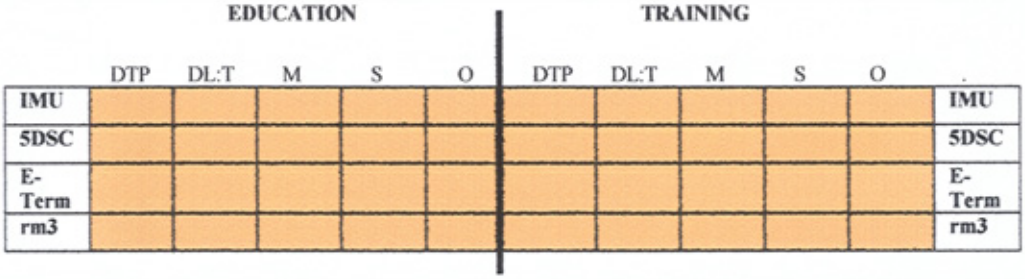
Common elements that match generic elements

Common elements that do not match generic elements

DTP : different types of players: records managers, archivists, administrators and IT personnel
DL:T: different levels of players: tactical
M: managerial
S : supervisory
O: operational

Tech: technical level

Figure 7.5. ***Generic model elements for ERM***



Common elements that match generic elements
DTP : different types of players: records managers, archivists, administrators and IT personnel
DL;T: different levels of players: tactical
M: managerial
S : supervisory
O: operational

2.1.3 *Mapping/Comparison of pragmatic examples against the generic model of vocational and professional education and training.*

Fulfilling the need for education and training:

Figure 7.6. **Programmes**

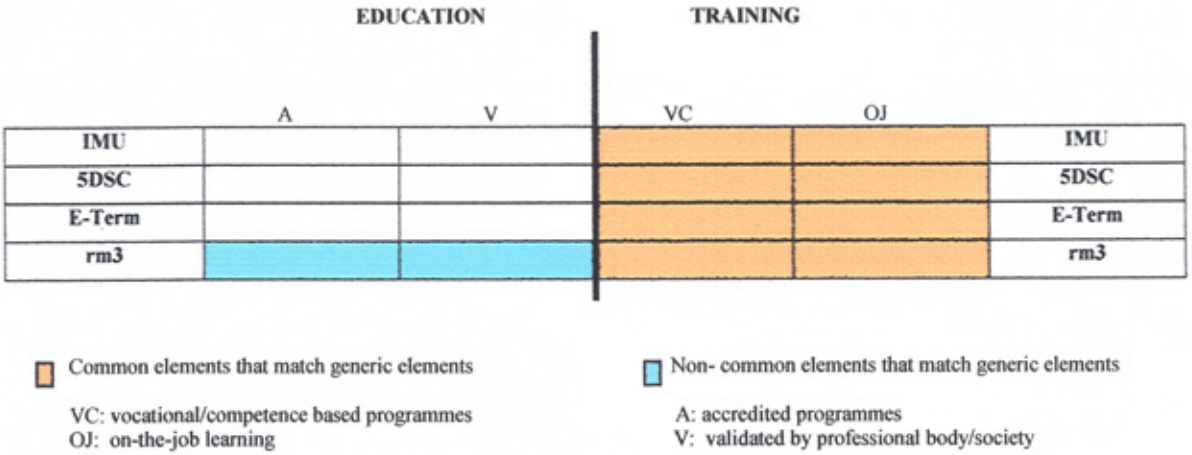
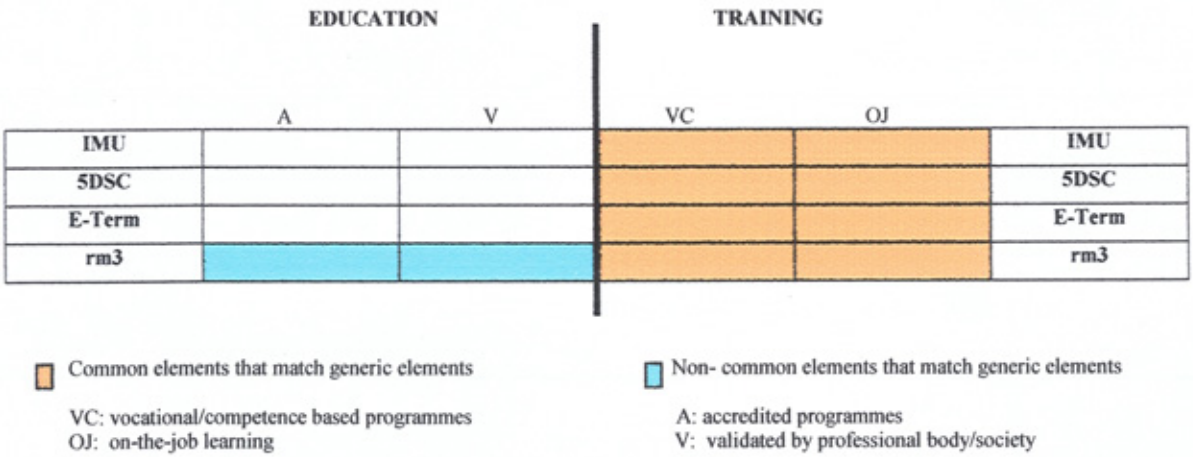


Figure 7.7. ***Generic Model elements for ERM***



2.1.4 *Mapping/Comparison of pragmatic examples against the generic model of vocational and professional education and training.*

Figure 7.8. **Curriculum/subject matter**

Common elements that match generic elements

TP: theory, principles and standard practices in record/archives and information management
SK: specialist knowledge on professional responsibilities
SS: specialist skills on professional tasks
OC: occupational standard practices

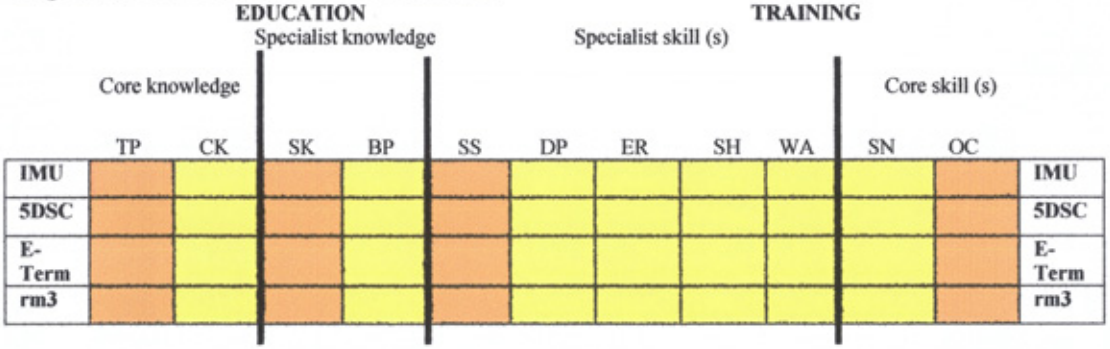
Non-generic and non-common elements

MA: managing all types of records for long term preservation

New elements that are not generic but common

CK: core knowledge for records managers, archivists, administrators and IT personnel to perform new roles and responsibilities
BP: building partnership: record keeping concepts for non-record professionals; concepts and trends in ICT for non-ICT professionals; concepts and trends in business operations.
DP: design processes and implementation of ER keeping systems.
ER: ER surveys and scheduling, appraisal and preservation.
SH: skills to help the records managers and archivists to become specialists who can engage from the earliest possible moment in defending the interest of record keeping/archiving in organisation.
WA: work processes for ER for long term preservation
SN: skills for records managers, archivists, administrators and IT personnel to perform new roles and responsibilities.

Figure 7.9. ***Generic Model elements***



Common elements that match generic elements

TP: theory, principles and standard practices in record/archives and information management
SK: specialist knowledge on professional responsibilities
SS: specialist skills on professional tasks
OC: occupational standard practices

New elements not generic but common

CK: core knowledge for records managers, archivists, administrators and IT personnel to perform new roles and responsibilities
BP: building partnership: record keeping concepts for non-record professionals; concepts and trends in ICT for non-ICT professionals; concepts and trends in business operations.
DP: design processes and implementation of ER keeping systems.
ER: ER surveys and scheduling, appraisal and preservation.
SH: skill s to help records managers and archivists to become specialists who can engage from the earliest possible moment in defending the interest of record keeping/archiving in the organization.
WA: work processes for ER for long term preservation
SN: skills for records managers, archivists, administrators and IT personnel to perform new roles and responsibilities.

2.1.5 *Mapping/Comparison of pragmatic examples against the generic model of vocational and professional education and training.*

Figure 7.10. **Pedagogic/learning approach**

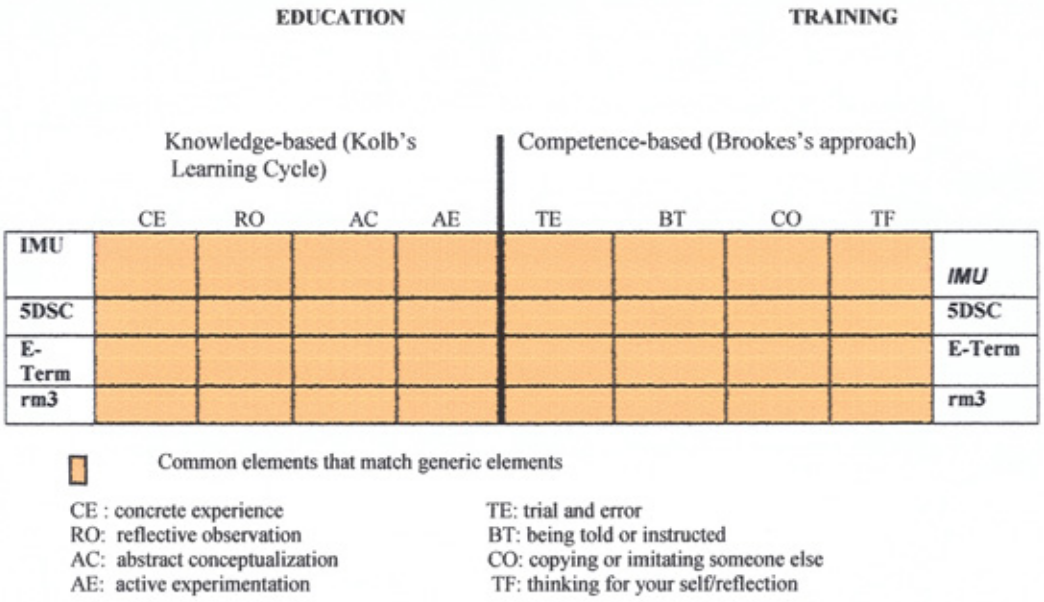
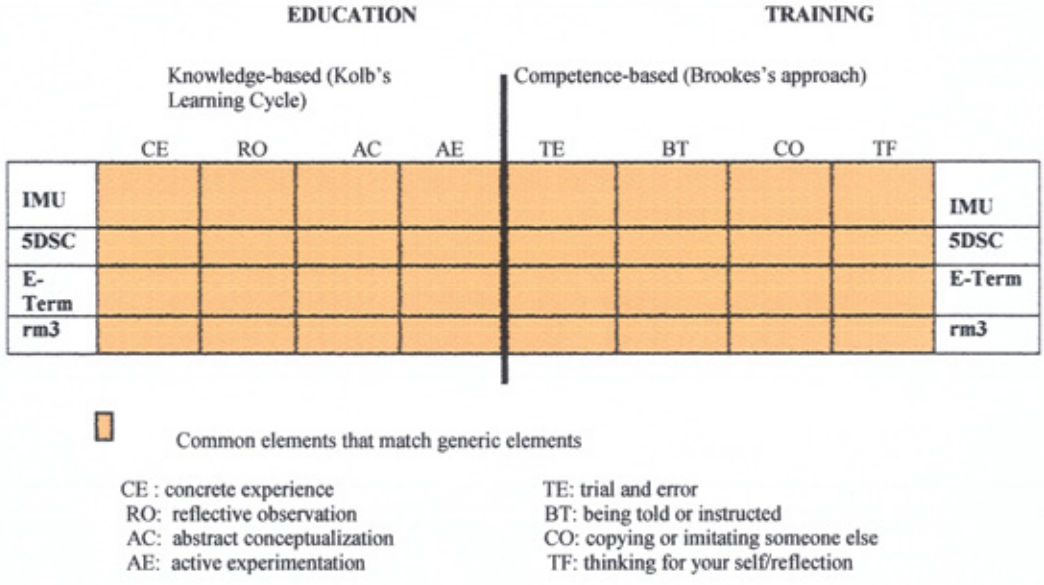


Figure 7.11 ***Generic Model elements for ERM***



2.1.6 *Mapping/Comparison of pragmatic examples against the generic model of vocational and professional education and training.*

Figure 7.12. **Mode of delivery and achievement**

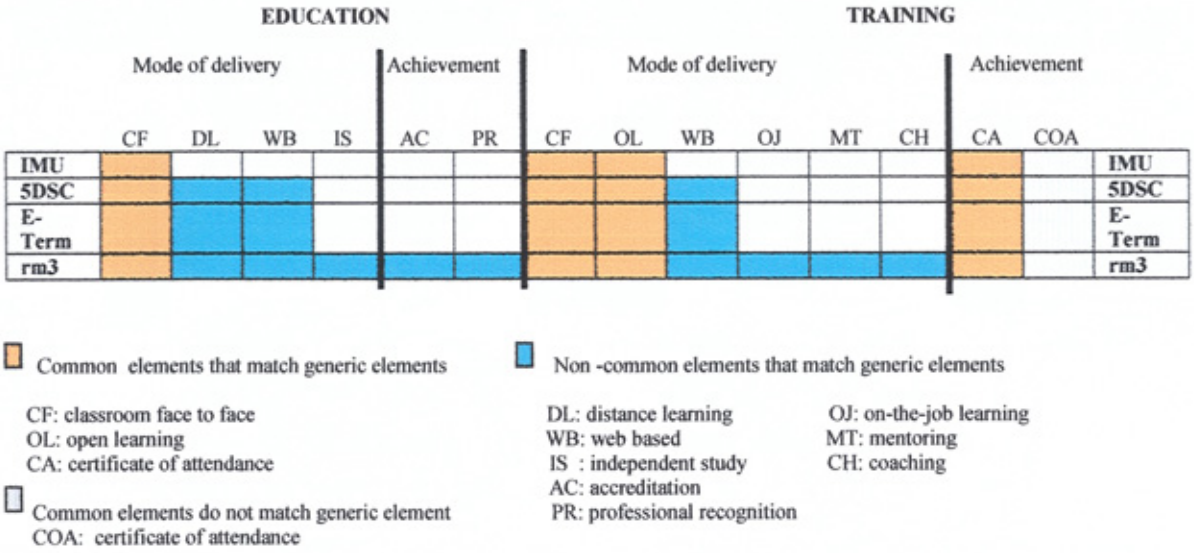
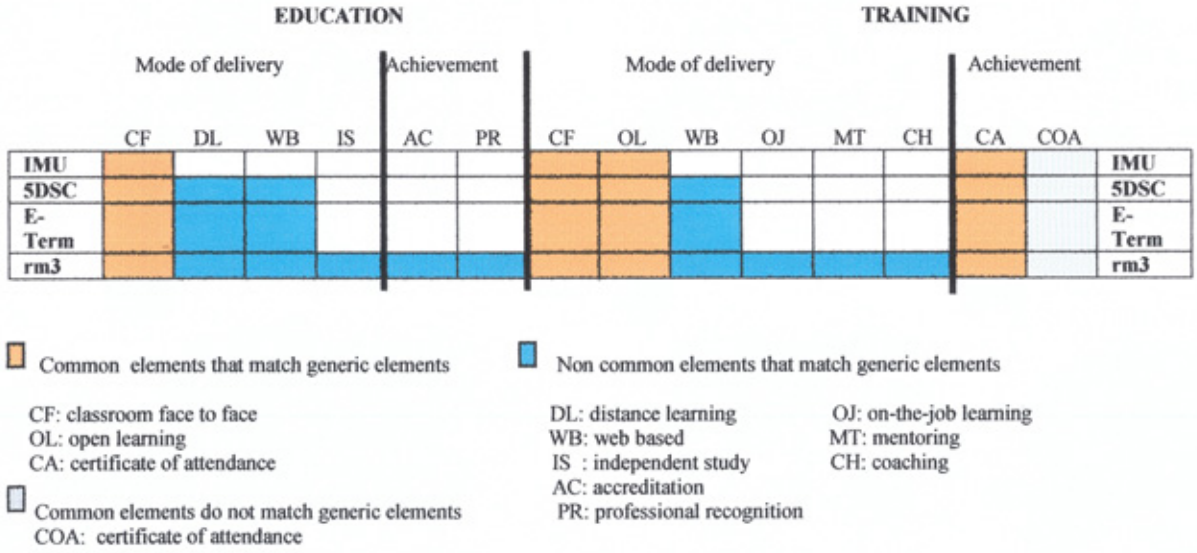


Figure 7.13. ***Generic Model elements for ERM***



3. Conclusion

From the critical analysis of pragmatic examples, and mapping and comparison of the elements of the pragmatic examples against the generic model of vocational and

professional education and training, it was possible to develop a generic model of vocational and professional education and training for ERM. The tabular presentation of the generic model in Figure 7.14 comprises generic model elements from Figures 7.3, 7.5, 7.7, 7.9, 7.11 and 7.13. (on pages 174 to 179).

A diagrammatic presentation of the model presented in Figure 7.15 (on page 185) shows that there is a dynamic interaction between the three dimensions of education and training for ERM. These dimensions include "context/driver", "target to be educated and trained" and "fulfilling the needs". The diagram represents the mutual interplay between need fulfillment and the two other elements, namely "context/driver", and "target to be educated and trained". The element of need fulfillment bridges the two other elements, namely "context/driver" and "target to be educated and trained", thereby representing an important link between the three dimensions. Without these three dimensions it is impossible to develop any education and training programme.

In the generic model, the electronic environment emerged as the context/driver for the record keepers' need to acquire knowledge and skills in ERM, as they have to ensure the integrity, reliability and authenticity of the records created. The record keepers regarded this as their new responsibility, and therefore expressed the need to forge new working partners to take advantage of expertise in the fields of records management, administration and IT. This is the main reason why building partnerships between the target groups under a common education and training programme on ERM (also suggested by the literature review) emerged as prominent context/driver for education and training in ERM in the generic model. Partnerships are important, as managing electronic records now relies on IT, must be integrated into the business processes of an organisation.

In any organisation, electronic records pose challenges as every staff member is likely to have a PC on their desk, giving him or her the freedom and power to generate information electronically. Records management in the electronic environment therefore needs to involve staff members across all levels of an organisation. However, education

and training in the generic model are specifically developed for certain groups of key players, namely the records managers, archivists, administrators and IT personnel at the tactical, strategic, managerial and operational levels.

To fulfill the need for education and training, the generic model addressed and incorporated the four pragmatic examples' programme structure of the ERM shared education (within an accredited programme) and training needs (within a vocational/competence based programme) based on the core and specialist knowledge and skills covering topic of ERM from principles to implementation, with scenarios and case examples related to the relevant organisations. The knowledge and skills in ERM within the generic model utilised extensive pedagogic framework based on Kolb's (1984) learning cycle and Brooke's (1995) competence based approach, embedding theory in practical case studies through the various relevant modes of delivery and awards for achievement.

The generic model for vocational and professional education and training in ERM in Figure 7.15 illustrates the relations between the "context/drivers", "target to be educated and trained" and "fulfilling the need for education and training" in ERM for the record keepers. Based on the diagram, the context/driver determines need fulfillment which involves formulation of educational and training programmes, curriculum contents, learning approach, modes of delivery and levels of competence at the end of the learning process tailored to the specific needs of the various target groups. Conversely, the target groups to be educated and trained in ERM determine the "need fulfillment" which represents a response to "context/driver". In this case, the "context/driver" includes the need for partnership building between the four groups of record keepers. The generic model for vocational and professional education and training in ERM in Figure 7.15 has been developed successfully to meet the first aim and objective of this study.

Figure 7.14. Generic model for vocational and professional education and training in ERM

Dimensions	Education	Training
1. **Context/Driver** Establishing the need or necessity for vocational/professional education and training (aims and objectives).	The need for knowledge and understanding in the various occupational areas for: -personal reasons: to earn a living; extension of formal education, both immediate and after a lapse of time, for personal development and interest. -professional development. (Jarvis 1985; Jessup 1990; Sheckleton 1990; Brookes 1995). -economic: occupational orientation to develop learners' job potential to meet the varying needs of business and industry. (Boffy 1990; Greenacre 1990; Rowarth 1990; Jessup 1990 & 1991; Herzog 1996; Raggatt & Williams 1999). :to raise the productivity and improve the flexibility and motivation of the labour force. (NCVQ 1990 in Hyland 1994; Rust 1992). :to overcome skill shortages which may develop and impede growth of innovation, and to ensure that there is sufficient education in emerging new skills. (Jessup 1990 & 1991; Hyland 1993; NCVQ 1990 in Hyland 1994; Finegold 1998).	The need of specific skill (s) required in the performance of a specific task (s) in the work place for: -personal reason: to enable employee to up-date and extend their skills and to develop through their working lives. -professional development. (Manpower Services Commission Report 1983 in Jarvis 1985). -organisational: to fulfill the need of organisations for different kinds of specially qualified employees to fulfill their specific tasks. (Fletcher 1991; Field & Drysdale 1991; Field 1999). : to raise the productivity and improve the employees' specific job performance. (Hyland 1994). :to ensure employees are equipped with sufficient training in new required skills; to adjust quickly and effectively to new specific methods, processes, products, services and technologies. (Field & Drysdale 1991; Brookes 1995; Rae 1997). *-building partnership/target groups to work together.* *-to perform new roles and responsibilities.* *-electronic environment.* *-administrative demands for integrity, reliability and authenticity of records.*
2. Target to be educated and trained	Those with the intention of joining a profession and practitioners in any occupation: -different types of players who perform different roles and responsibilities and -different levels of players. -tactical level -management level -supervisory level -operational level (Hyland 1994; Boydell & Leary 1996; Baker 1997; Yanakieva 2001)	Categories of staff involved in work processes relating to their specific professional responsibilities: -different types of players who perform different roles and responsibilities and -different levels of players. -tactical level -management level -supervisory level -operational level (Hyland 1994; Herzog 1996; Truelove 1997)

Dimensions	Education	Training
3. Fulfilling the need for education and training	To provide the target groups with sufficient knowledge/understanding for the ultimate purpose of fulfilling their professional responsibilities through: -accredited programmes -validated by professional societies/ bodies. (Fletcher 1991; Rust 1992; Hyland 1994; Raggatt & Williams 1999).	To provide the target groups with sufficient skill (s) or competence needed for the practical applications of skill (s) relating to their professional responsibilities through: -vocational/competence based programme. -on-the-job learning. (Field & Drysdale 1991; Jessup 1991; Burke 1995; Hodkinson & Issitt 1995; Rae 1997).
	-curriculum content/subject matter: - modules: - <u>core knowledge</u>: *-theory, principles and standard practices on records, archives and information management:* *-introduction to records and information management; principles and tools for managing records; principles and tools for information storage; retrieval and access; principles of appraisal and and preservation.* *-solid grounding in records management principles and practices and understanding of role records play in supporting organizations objectives as well as legal and other regulatory requirements.* *-core knowledge for records managers, archivists, administrators and IT personnel to perform new roles and responsibilities.* *-<u>specialist knowledge</u>:* *-building partnership: record keeping concepts for non-record professionals; concepts and trends in ICT for non-ICT professionals; concepts and trends in business operations:* *-impact of ICT on record keeping* *-the business perspective* *-design and implementation of record keeping systems.* *-records management policy* *-strategic organization drivers.*	-curriculum contents/subject matter: -modules: -core skill (s) *-occupational standard practices on electronic records management, archives and information management and* *-work processes to protect the interest of archives in a digital environment.* *-core skills for records managers, archivists, administrators and IT personnel to perform new roles and responsibilities.* *-<u>specialist skill (s)</u>* *-design processes and implementation of electronic record keeping systems.* *-electronic records survey and scheduling; archives and permanent preservation; legal issues; information and communication technologies; users services and user relations.* *-work processes for electronic records for long term preservation.* *-skills to help records managers and archivists to become specialists who can engage from the earliest possible moment in defending the interest of record keeping and archiving in the organisation.*

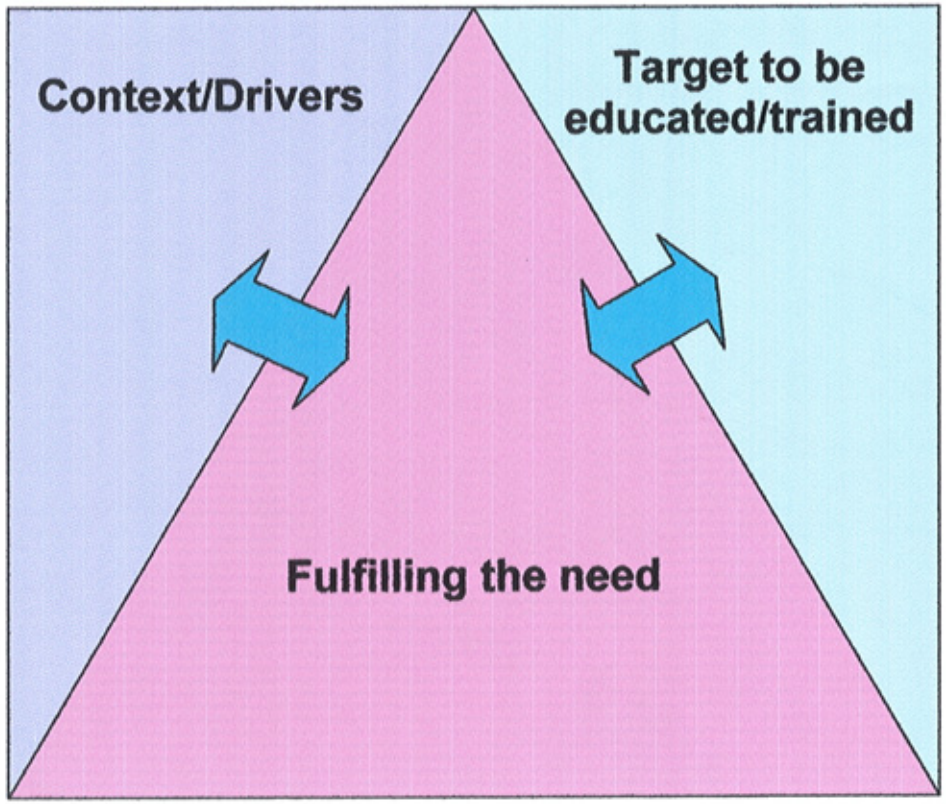
Dimensions	Education	Training
	-pedagogic/learning approach: -knowledge-based: (Kolb's (1984) learning cycle: -concrete experience: learner personally involved in something and gains feedback. -reflective observation: feelings and thoughts emerging from reflection. -abstract conceptualisation: from generalisations and conceptual understanding the new situation is tackled effectively. -active experimentation: the newly learned concepts must be tested out in new situations where the learner makes a link between theory and action by planning for the action and carrying it out. (Kolb 1984; Rae 1997; Truelove 1997).	-pedagogic/learning approach: -competence-based: (Brookes's (1995) approach: -trial and error: traditional forms of practical learning activity; feedback to confirm if the attempt is successful or otherwise. -being told or instructed: prescriptive approach; puts trainer in the role of 'expert', relies upon trainer to pass on the skills required. -copying or imitating someone else dependent on demonstrator providing a positive demonstration of the skill or task, i.e. the correct way to do something. -thinking for yourself/reflection: learning occurs when learner is encouraged to think about something that he has done, some skill he has attempted to demonstrate or some problems on which he has reflects (what went right, what went wrong and *why*). (Fletcher 1991; Field & Drysdale 1991; Brookes 1995; Truelove 1997; Konrad 2004).
	-mode of delivery: -classroom face to face -distance learning -web- based learning -independent study. (Holmburg 1986; Paul 1990; Shale 1990; Evan & Nation 1992).	-mode of delivery: -classroom face to face -open learning -web-based learning -on-the-job learning -mentoring -coaching. (MacNay 1988; Brookes 1995; Tight 1996).
	-achievement: -accreditation. -academic modular/credit based qualification. -professional recognition. (Squires 1986; Ram 1989; Simosko 1991; Challis 1993; Walker 1994).	-achievement: -certificate of attendance.

Figure 7.15

Model for vocational and professional education and training in electronic records management

Three dimensions:

- Context/Drivers
  - Establishing the need
  - Building partnerships
- Target to be educated/trained
  - Different players
  - Different levels
- Fulfilling the need
  - Programmes
  - Curriculum
  - Pedagogic approach
  - Mode of delivery
  - Achievement



PART III:

EXPLORING ERM PRACTICES IN THE MALAYSIAN CASE STUDY

- Chapter Eight - Findings of Survey and In-depth Interviews in the Malaysian Federal Government

- Chapter Nine - Findings of Survey and In-depth Interviews in the National Archives of Malaysia

CHAPTER EIGHT

FINDINGS OF SURVEY AND IN-DEPTH INTERVIEWS IN THE MALAYSIAN FEDERAL MINISTRIES

This chapter reports and discusses the findings in relation to the study's second aim and objective pertaining to the Malaysian record keepers' need for knowledge and skills in ERM. Patterns detected in quantitative and qualitative data are reported concurrently to support the arguments. The conclusion provides a summary of the main issues that were identified.

1. Introduction

The quantitative data in the fourth phase of the study was derived from a survey that was carried out among the administrators, records managers and IT personnel from the Malaysian Ministries. The data was collected through questionnaires (see Appendix 4). The period of data collection was between 10th December 2002 to 10th January 2003. The quantitative data was supplemented by data from in-depth interviews with the Chief Assistant Director of EG Development Division, Deputy Director of IT Department, Head of Systems Division and the Head of Registry of the Prime Minister's Department (see Appendix 6, 7 and 8). The interviews were conducted from July to August 2003.

The findings of the questionnaire survey and in-depth interviews are presented in three main areas of investigation as outlined in the second aim and objective of the study. These are: (a) to investigate and identify the roles and responsibilities of the different record keepers with regard to electronic records, (b) to investigate the situation in which the different record keepers manage electronic records and (c) to identify whether the record keepers had received adequate education and training to support their roles and responsibilities in managing electronic records.

2. The roles and responsibilities of the different record keepers on electronic records

Two emergent issues in the area of roles and responsibilities were identified. Firstly the roles and responsibilities were not understood by the different record keepers; and secondly there was evidence of shared and individual responsibilities:

2.1 *Understanding of roles and responsibilities by the different record keepers.*

The different record keepers did not interpret their roles and responsibilities in the same way and some did not view themselves as being responsible for the task at hand.

Although the data in Figure 8.1 suggests that all of the 15 Ministries hold records in electronic form, not all of the key players in each Ministry recognised this. Of the 41 respondents (five records managers and three administrators), eight of them believed their Ministry did not hold electronic records. When asked if they themselves were responsible for the electronic records, of the 33 who had recognised the existence of electronic records in their Ministry, only 23 felt they were responsible for those records. It is perhaps not surprising that not everyone felt they could answer 'yes' to the question about responsibility. They may have felt responsible for some of the electronic records in their Ministry but not others. However, what is interesting is the breakdown of the responses.

Seven of the nine records managers and nine of the 10 administrators acknowledged responsibility; but only six of the 15 IT personnel recognised themselves as being responsible for electronic records. The data therefore seems to suggest that, whilst *all* of the IT personnel surveyed recognised the existence of electronic records within their Ministries, less than half of them (only 46%) recognised themselves as being responsible for the care of those records. IT personnel have a significant role in developing systems, which may be recordkeeping systems, and have an important role to play alongside records professionals and system users in support of electronic recordkeeping. An additional intriguing result relates to the 'perception' of who is ultimately responsible for looking after the electronic records if it is not the key player in question. Of the 18 respondents who did not view themselves as having responsibility, only 11 identified the people they believed to be responsible. Of the 11 responses no fewer than eight were identified the records creators. Disappointingly, four of the non-respondents to this follow-on question were records managers.

Figure 8.1. Roles and responsibilities of the record keepers in managing electronic records.

Ministry	Job title	Are e-records held?	Are you responsible	Are others responsible?	Have you had any education & training on e-records
Defense	Administrator	Yes	Yes		No
	IT personnel	Yes	No	Records officers	No
	Records manager	Yes	Yes	Other officers assigned to	No
Education	Administrator	Yes	Yes		Yes
	IT personnel	Yes	Yes	Creators	Yes
	Records manager	Yes	Yes		Yes
Enterpreneur	Administrator	Yes	Yes		Yes
	IT personnel	Yes	Yes	IT personnel	Yes
	Records manager	Yes	Yes	Other officers in charge	Yes
Finance	IT personnel	Yes	Yes		No
Foreign Affairs	Administrator	Yes	Yes		No
	IT personnel	Yes	No	System administrators	No
	Records manager	Yes	Yes		Yes
Health	Administrator	No	No		No
	IT personnel	Yes	No	Individual creator	No
	Records manager	No	No		No
Housing	Administrator	No	No		No
	IT personnel	Yes	Yes		Yes
	Records manager	No	No		No
Land	Administrator	Yes	Yes		Yes
	IT personnel	Yes	No	Finance officers	No
	Records manager	Yes	Yes		Yes
Multimedia	IT personnel	Yes	Yes		Yes
	Records manager	No	No	IT personnel	No
Primary Industry	Administrator	Yes	Yes		Yes
	IT personnel	Yes	Yes		Yes
	Records manager	Yes	Yes		Yes
Prime Minister's Department	Administrator	Yes	Yes		Yes
	IT personnel	Yes	No	Individual creators	No
	Records manager	No	No		No
Public Works	Administrator	No	No		No
	IT personnel	Yes	No	Creators	No
Science and Technology	Administrator	Yes	No	Individual creator	No
	IT personnel	Yes	No	Creators	No
	Records manager	No	No		No
Transport	Administrator	Yes	Yes		Yes
	IT personnel	Yes	No	Creators	No
	Records manager	Yes	Yes		Yes
Youth and Sport	Administrator	Yes	Yes		Yes
	IT personnel	Yes	Yes		Yes
	Records manager	Yes	No	Creators	No

This analysis indicates that not all the respondents interpreted their roles and responsibilities in the same way. Evidently, they were not aware of their roles and responsibilities in relation to ERM. For example, the records manager in the Prime Minister's Department firmly believed that he was not responsible for looking after the electronic records when he argued that, "electronic records is not my area of responsibility. People in charge of the systems should know this because it is they who have created the systems. In the registry we deal only with paper records." [PMR1I02-12/7(80)]. In this case it is obvious that the records manager's role and responsibility was confined to the registry and paper records.

His distance from activities pertaining to systems creation and maintenance, coupled with lack of awareness and knowledge, has made him believe that ERM was the sole responsibility of the IT personnel. But the IT personnel at the Prime Minister's Department insisted that it was not their responsibility to look after the records. As reported by the Head of the Systems Division, "records are the concern of the records staff". [PMIT2I02-15/7(05)]. The Chief Assistant Director of EG Development Division of the Prime Minister's Department believed that the administrative staff were not involved in looking after the records because "right now policy guidelines and standard procedures are lacking in the government and nobody can tell us what to do" [PMA1I01-18/7(20)].

Those respondents, including the records managers, who did not view themselves as being responsible did not understand their actual roles and responsibilities. It is possible that they may not have been made aware, and may not have been told, of their respective role and responsibility.

Further exploration of the data shows that in only three of the 15 Ministries that responded did all three key groups of record keepers (i.e. records managers, IT personnel and administrators) respond positively to *both* the question "Does your ministry hold records in electronic form?" and also the question "Are these e-records looked after by yourself?". Of these three, two are very new Ministries (viz. Ministry of Entrepreneurial

Development and the Ministry of Primary Industry). The third is the Ministry of Education, which is apt given the context of the research.

These could provide a model for other Ministries for their recognition of the need to combine roles and responsibilities, in regard to getting record managers and administrators to participate in the design of computer-based information systems, as suggested by the literature review.

A little surprising, and in need of further investigation, is the response from the Prime Minister's Department. Here the records manager indicated that this department did not hold e-records, and therefore was not responsible for looking after them; and the IT personnel, though acknowledging the existence of electronic records within the Ministry, likewise did not look after the records. The administrator, on the other hand, acknowledged not only the existence of e-records but also his role in looking after them. As the Prime Minister's Department is responsible not only for the initiation but also the implementation of EG in the Malaysian public sector, it would not be unreasonable to expect that all three key players should at least recognise the existence of electronic records in their department (if the Prime Minister's Department is to led by example) and quite possibly their combined roles and responsibilities in the management of these records. The questions asked to elicit this data were close ended questions, and may not have taken cognisance of the actual situation. When this issue was taken up with the same records manager, it was revealed that "other then keeping digitised documents through the scanning project, we also have two human resource management systems – SISPEN, HRMIS and the EPS, but I am not in charge of these." [PMR1I02-12/7(10)].

This data reveals the actual situation. Although the three key players at the Prime Minister's Department recognised the existence of electronic records in their Department, it was only the administrator who recognised himself as being responsible for looking after the records. This might suggest that the records manager tended to deal with confidential records, whilst the IT personnel dealt with confidential data, which as the interview data revealed, tended to be held in paper format [PMR1I02-12/7(43)].

2.2 *Evidence of shared and individual responsibilities*

The existence of shared and individual activities among the three groups of key players is evident in four areas of electronic records management – responsibility for the records, administrative overseeing of electronic records, issuance of electronic records policy and implementation of electronic records work practices.

2.2.1 *Responsibility for the records.* As illustrated in Figure 8.1, 12 of the Ministries surveyed had different key players discharging their respective roles and responsibilities which were mutually exclusive, as compared to the three Ministries where the three groups of record keepers performed shared and combined roles and responsibilities in looking after their electronic records. The data indicated that:

- the IT personnel did not recognise themselves as being responsible for looking after the records,
- the administrators recognised themselves as having the responsibilities, and
- the records managers believed that the creators were responsible for the records.

In this case the creators may be the administrators and their subordinate staff. Even though the different key players were performing different roles, there was a need for coordinated responsibility as all of them were involved somehow or rather with electronic records as they used computers in carrying out their administrative routines. As suggested in the literature review it is very important for the different record keepers to understand their roles and responsibilities in the area of electronic recordkeeping. Within the context of this study, there is work to be done on building partnerships. Education and/or training programmes provide the impetus for this.

The survey data in Figure 8.2 shows that the Ministries surveyed have set up different locations to keep their electronic records. Again the findings indicate that different record keepers performed different roles for the same records. The majority of the surveyed Ministries kept their electronic records in the Ministry's IT Department. This

Figure 8.2. The location of electronic records kept in the surveyed Malaysian Ministries.

Ministry	Job title	Records Centre	IT Department	In every Administrative Unit	Other (specify)	Transfer to Archives
Defense	Administrator	No	Yes	No		No
	IT personnel	No	Yes	No		No
	Records manager	No	Yes	No	Strong room	No
Education	Administrator	No	No	No		No
	IT personnel	No	No	Yes		No
	Records manager	Yes	No	No		Yes
Entrepreneur	Administrator	Yes	Yes	Yes		No
	IT personnel	Yes	Yes	Yes		No
	Records manager	Yes	Yes	Yes		Yes
Finance	IT personnel	No	Yes	Yes		No
Foreign Affairs	Administrator	No	No	Yes		No
	IT personnel	No	Yes	Yes		No
	Records manager	No	Yes	No		No
Health	Administrator	No	No	No		No
	IT personnel	No	No	Yes		No
	Records manager	No	No	No		No
Housing	Administrator	No	No	No		No
	IT personnel	Yes	Yes	No		No
	Records manager	Yes	Yes	No		No
Land	Administrator	No	Yes	Yes		No
	IT personnel	No	Yes	Yes		No
	Records manager	No	Yes	Yes		No
Multimedia	IT personnel	No	Yes	No		No
	Records manager	No	No	No		No
Primary Industry	Administrator	Yes	Yes	No		No
	IT personnel	No	Yes	No		No
	Records manager	Yes	No	Yes		No
Prime Minister's Department	Administrator	No	Yes	No		No
	IT personnel	No	Yes	Yes		No
	Records manager	No	No	No		No

Ministry	Job title	Records Centre	IT Department	In every Administrative Unit	Other (specify)	Transfer to Archives
Public Works	Administrator	No	No	No		No
	IT personnel	No	No	Yes		No
Science and Technology	Administrator	No	No	Yes		No
	IT personnel	No	No	Yes		No
	Records manager	No	No	No		No
Transport	Administrator	Yes	No	No		Yes
	IT personnel	No	No	Yes		No
	Records manager	No	No	Yes		No
Youth and Sport	Administrator	No	No	Yes		No
	IT personnel	Yes	Yes	No		No
	Records manager	No	Yes	Yes		No

implied that the IT personnel in the IT Department were responsible for electronic records, regardless of whether they recognised themselves as being responsible for looking after the records. This is because they were actually in charge of the systems which must necessarily include recordkeeping systems, and they also discharged routine activities such as making back up copies and ensuring migration. The same Ministries also used their record centres to store their electronic records, and in this case it is not unreasonable to assume that the records managers were involved in ERM, whether directly or indirectly, even though they thought that they were not. This is simply because records centre management constitutes their professional responsibility. However, in the case of the Prime Minister's Department, the records and information copied onto magnetic tapes were preserved in the records centre, called the data recovery centre. When asked who were responsible for looking after the records and the records centre, the Chief Assistant Director of the EG Development Division answered, "the IT personnel in charge of the system" [PMA1I03-15/8(67)]. The Head of the Registry confirmed the involvement of the IT personnel when he said, "I am in charge of the registry and not the data recovery centre." [PMR1I01-2/7(78)]. In this case the Head of the Registry firmly believed that he was not responsible for looking after the electronic records even though he was assigned the responsibility to manage his departmental

records through the General Circular Letter No.1/1997. Was the same happening with the rest of the Ministries surveyed? If it was, the records managers and the other record keepers needed to be made aware of their responsibility.

The data on Figure 8.2 also indicates that the same Ministries kept their electronic records in the very administrative unit where the records were created, used and maintained. In this case it is reasonable to assume that the administrators and/or the creators were involved in ERM even though they thought otherwise. The same thing happened in the Prime Minister's Department where the qualitative data suggests that electronic records were created, used and maintained in the respective administrative unit. Although in all these cases custody did not always imply responsibility, the different record keepers in question must have understood their responsibility for managing the records as suggested by ISO 15489 (2001).

2.2.2 *Administrative overseeing of electronic records.* According to the survey (see Figure 8.3) the Federal Ministries created and maintained records/documents in electronic format, as suggested by the IT personnel in the respective Ministries, even though the answers to the types of records varied considerably because the surveyed Ministries still created, used and maintained conventional records. Questions were asked to ascertain whether the Ministries were concerned with ERM and had assigned staff to oversee ERM. According to the response, several Ministries recognised the benefits of establishing an Electronic Records Committee, an IT Committee and an Information Management Committee.

Figure 8.4 shows an interesting breakdown of the responses from the record keepers. The highest number of responses was received from the Ministry's IT Committee (17 respondents comprising eight IT personnel, six records managers and three administrators). Next highest was from the Information Management Committee (nine respondents consisting of two records managers, three administrators and four IT personnel). Next was from the Records Committee (eight responses). The lowest number of responses was from the Electronic Records Committee (three responses of

Figure 8.3. Types of e-records created and maintained in the surveyed Ministries

Ministry	Job title	Are ER held?	Policy	Minutes/ papers	Ministry's Publication	Accoun/ Finance	Project mgt.	Legal	Procure	Agree.	Lists and inventories	Prop	Personnel	Circ./ Dir.	Corres.	Blue.	Maps plans	Other
Defense	Records manager	Yes	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No
	Administrator	Yes	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No
	IT personnel	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No
Education	Records manager	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No	No	No
	Administrator	Yes	No	No	No	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No	No	No
	IT personnel	Yes	No	Yes	No	No	No	No	No	No	Yes	No	Yes	No	Yes	No	No	No
Enterpren.	Records manager	Yes	Yes	Yes	No	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No
	Administrator	Yes	No	Yes	No	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	No
	IT personnel	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Finance	IT personnel	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes	Yes	No	No	No	No
Foreign	Records manager	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Office	Administrator	Yes	No	Yes	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No	No	No	No
	IT personnel	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No
Health	Records manager	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Administrator	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	IT personnel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Housing	Records manager	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Administrator	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	IT personnel	Yes	No	No	No	No	No	Yes	No	No	Yes	No	Yes	Yes	No	No	No	No
Land	Records manager	Yes	Yes	No	No	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No
	Administrator	Yes	No	No	Yes	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No	No
	IT personnel	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	No
Multi-	Records manager	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Media	IT personnel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Primary	Records manager	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No	No
Industry	Administrator	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	No	Yes	Yes	Yes	No	No	No
	IT personnel	Yes	Yes	Yes	Yes	No	No	No	No	No	Yes	No	Yes	Yes	No	No	No	No

Ministry	Job title	Are ER held?	Policy	Minutes/ papers	Ministry's Publication	Accoun/ Finance	Project mgt.	Legal	Procure	Agree.	Lists and inventories	Prop	Circ./ Personnel	Dir.	Corres.	Blue.	Maps plans	Other
P.M's	Records manager	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Deprt.	Administrator	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No
	IT personnel	Yes	No	No	No	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No	No
Public	Administrator	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Work	IT personnel	Yes	No	No	No	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No	No
Science	Records manager	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
& Tech.	Administrator	Yes	No	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	No	No
	IT personnel	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes	No	No	No
Transport	Records manager	Yes	No	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes	No	No	No
	Administrator	Yes	No	No	No	No	No	Yes	No	No	Yes	No	Yes	Yes	Yes	No	No	No
	IT personnel	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	No
Youth	Records manager	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	No
& Sport	Administrator	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No
	IT personnel	Yes	No	Yes	No	Yes	No	No	No	No	No	No	Yes	No	No	No	No	No

Accoun/Finance: Account and financial records
Procure: Procurement
Agree: Agreement
Prop : Property
Circ/Dir: Circular and Directives
Corres: Correspondence
Blue: Blueprints and plans

Figure 8.4. Committees appointed to exercise general oversight of the e-records in the Ministries.

Ministry	Job title	Are e-record held?	Records Committee	E-records Committee	Information Management Committee	IT Committee	Archivist from National Archives	Other
Defense	Administrator	Yes	No	No	No	Yes	No	No
	IT personnel	Yes	No	No	No	No	No	No
	Records manager	Yes	No	No	No	Yes	No	No
Education	Administrator	Yes	Yes	No	No	No	No	No
	IT personnel	Yes	No	No	Yes	No	No	No
	Records manager	Yes	No	No	No	Yes	No	No
Enterpreneur	Administrator	Yes	Yes	No	No	No	No	No
	IT personnel	Yes	No	No	Yes	Yes	Yes	No
	Records manager	Yes	No	No	Yes	Yes	No	No
Finance	IT personnel	Yes	No	No	No	Yes	No	No
Foreign Affairs	Administrator	Yes	No	No	No	No	No	No
	IT personnel	Yes	No	No	No	Yes	No	No
	Records manager	Yes	No	No	No	Yes	No	No
Health	Administrator	No	No	No	No	No	No	No
	IT personnel	Yes	No	No	No	Yes	No	No
	Records manager	No	No	No	No	No	No	No
Housing	Administrator	No	No	No	No	No	No	No
	IT personnel	Yes	No	No	Yes	Yes	No	No
	Records manager	No	No	No	No	No	No	No
Land	Administrator	Yes	No	No	Yes	Yes	No	No
	IT personnel	Yes	Yes	No	No	Yes	No	No
	Records manager	Yes	No	No	Yes	No	No	No
Multimedia	IT personnel	Yes	No	Yes	No	Yes	No	No
	Records manager	No	No	No	No	No	No	No
Primary Industry	Administrator	Yes	Yes	No	Yes	No	No	Yes(PSD)
	IT personnel	Yes	No	No	No	Yes	No	No
	Records manager	Yes	No	No	No	No	No	No

Ministry	Job title	Are e-record held?	Records Committee	E-records Committee	Information Management Committee	IT Committee	Archivist from National Archives	Other
Prime Minister's Department	Administrator	Yes	Yes	Yes	No	No	No	No
	IT personnel	Yes	No	No	No	No	No	No
	Records manager	No	No	No	No	No	No	No
Public Works	Administrator	No	No	No	No	No	No	No
	IT personnel	Yes	No	No	No	No	No	No
Science and Technology	Administrator	Yes	No	No	No	No	No	No
	IT personnel	Yes	No	No	No	No	No	No
	Records manager	No	No	No	No	No	No	No
Transport	Administrator	Yes	No	No	No	No	No	No
	IT personnel	Yes	No	No	No	No	No	No
	Records manager	Yes	No	No	No	No	No	No
Youth and Sport	Administrator	Yes	Yes	Yes	Yes	Yes	No	No
	IT personnel	Yes	Yes	No	Yes	Yes	No	No
	Records manager	Yes	Yes	No	No	Yes	No	No

whom only one respondent, i.e an IT personnel from the Entrepreneurial Ministry believed that archivists from the National Archives have a role to play in ERM.

Detailed analysis of the data in Figure 8.4 reveals interesting findings. Many of the surveyed Ministries have established some form of committee to have general oversight of the operation of their electronic records programme. Across Ministries, the data shows that of the 15 Ministries only five (that of Education; Entrepreneurial Development; Land and Corporatives; Primary Industry; and Youth and Sports) reported that the Records Committee was involved in exercising general management on their Ministries' electronic records. But surprisingly, none of the records managers from these Ministries (seven of whom believed that their Ministries had electronic records in their custody) recognised the rightful role of the Records Committee in the overall responsibility for ERM. This may be because to all intents and purposes, the committee did not exist for them, or they themselves were not part of this committee, and therefore were not concerned, or did not know of the existence of this committee. It is interesting

to note also that two newly established Ministries namely the Multimedia Ministry and the Youth and Sports Ministry have come to recognise the importance of the Electronic Records Committee.

Surprisingly, in the Prime Minister's Department none of the record keepers appear to recognise the need for any committee to oversee activities on electronic records. When asked if there was any committee established to oversee the overall activities of ERM in the Prime Minister's Department, or in any other Ministries where the EG systems were piloted under her supervision, the Chief Assistant Director of EG Development Division confirmed the absence of any such Committee to help in the implementation of the EG project [PMA 1I01-18/7(59)].

2.2.3 *Issuance of electronic records policy.* The data suggests that in the majority of Ministries there were policy guidelines on electronic records. Detailed examination of the data in Figure 8.5 shows that of the 15 Ministries, 10 have written policy guidelines on electronic records, issued either by their IT personnel, records managers, administrators or in collaboration. It is evident that across the Ministries, most of the policy guidelines were issued by the IT personnel. Fifteen out of 18 responses recognised the existence of such policy. For example in four Ministries (Education, Finance, Health and Multimedia), IT personnel seemed to contribute significantly to the issuance of policy guidelines pertaining to the electronic records. This was followed by those issued by records managers with seven responses and administrators with six responses. There is evidence to show that the three groups of record keepers worked together in the Ministries, such as that of Entrepreneurial Development; Foreign Affairs; Land and Cooporatives; Primary Industries; as well as Youth and Sports. These key players helped formulate policy guidelines (see Figure 8.5 again). The existence of policy guidelines suggests that the five Ministries have recognised the importance of policy guidance for the successful implementation of their ERM.

Figure 8.5. Written policy guidelines on electronic records issued in the surveyed Malaysian Ministries.

Ministry	Job title	Are e-records held?	Is there policy guidelines?	Issued by records officer	Issued by National Archives	Issued by administrator	Issued by IT personnel	Issued by other officers	By whom?
Defense	Administrator	Yes	No						
	IT personnel	Yes	No						
	Records Manager	Yes	No						
Education	Administrator	Yes	Yes	No	No	No	Yes	No	
	IT personnel	Yes	Yes	No	No	No	Yes	No	
	Records manager	Yes	No						
Enterpreneur	Administrator	Yes	No						
	IT personnel	Yes	Yes	Yes	No	Yes	Yes	No	
	Records manager	Yes	Yes	Yes	No	Yes	Yes	No	
Finance	IT personnel	Yes	Yes	No	No	No	Yes	No	
Foreign Affairs	Administrator	Yes	Yes	Yes	No	No	No	No	
	IT personnel	Yes	No						
	Records manager	Yes	Yes	No	No	No	Yes	No	
Health	Administrator	No							
	IT personnel	Yes	Yes	No	No	No	Yes	No	
	Records manager	No							
Housing	Administrator	No							
	IT personnel	Yes	No						
	Records manager	No							

Ministry	Job title	Are e-records held?	Is there policy guidelines?	Issued by records officer	Issued by National Archives	Issued by administrator	Issued by IT personnel	Issued by other officers	By whom?
Land	Administrator IT personnel Records manager	Yes Yes Yes	Yes Yes Yes	Yes No No	No No No	Yes No No	Yes Yes Yes	No No No	
Multimedia	IT personnel Records manager	Yes No	Yes No	Yes	No	No	Yes	No	
Primary Industry	Administrator IT personnel Records manager	Yes Yes Yes	Yes Yes Yes	Yes No Yes	No No No	No No Yes	Yes Yes No	No No No	
Prime Minister's Department	Administrator IT personnel Records manager	Yes Yes No	No No No						
Public Works	Administrator IT personnel	No Yes	No No						
Science and Technology	Administrator IT personnel Records manager	Yes Yes No	No No No						
Transport	Administrator IT personnel Records manager	Yes Yes Yes	No Yes No	No	No	Yes	No	No	

Ministry	Job title	Are e-records held?	Is there policy guidelines?	Issued by records officer	Issued by National Archives	Issued by administrator	Issued by IT personnel	Issued by other officers	By whom?
Youth and Sport	Administrator IT personnel Records manager	Yes Yes Yes	Yes Yes No	No No	No No	Yes No	Yes Yes	No No	
Total	41	33	18	7	0	6	15	0	

However, none of the record keepers reported that the archivists from the National Archives were responsible for issuing any policy guidelines on electronic records. This was clearly emphasized by the Chief Assistant Director of EG Development Division in the Prime Minister's Department as follows: "right now, policy guidelines and standards procedures are lacking in our government, nobody can tell us what to do" [PMA1I01-18/7(20)]. When further questions pertaining to policy guidelines on electronic records were asked in the interview sessions, the record keepers in the Prime Minister's Department suggested that the policy guidelines on public records including electronic records is within the responsibility of the National Archives of Malaysia. In response to the question, "Who has the authority in the Prime Minister's Department to formulate and disseminate policy guidelines on electronic record keeping, the Chief Assistant Director of EG Development Division firmly stated, "in the government, it is the National Archives." [PMA1I01-18/7(44)]. This view was supported by the Deputy Director of IT in the Prime Minister's Department when the absence of legislation, and policy guidelines on electronic records in the federal government was brought up in two interview sessions [PMIT1I01-2/7(21)]. To confirm the views of the Chief Assistant Director of EG Development Division and the Deputy Director of IT, the records manager in one of the interviews stated, "for paper records, yes, there are policy guidelines from the National Archives but not for electronic records" [PMR1I01-2/7(23)].

Figure 8.6 illustrates that none of the 10 surveyed Ministries which had policy guidelines on electronic record acknowledged having all the nine practices listed in the questionnaire. The Ministry of Entrepreneurial Development and the Ministry of Land and Cooporatives reported having guidelines in six areas namely identification, appraisal, retention, disposal, migration and preservation.

The overall findings suggest that the most common denominator across the different groups was that they did not transfer their electronic records to the National Archives, and none of the record keepers believed that their Ministries had established a link with the National Archives with regard to policy guidelines on ERM. Even the Chief

Figure 8.6. Guidance on electronic records issued in the surveyed Ministries.

Ministry	Job title	Are ER held?	Is there guidance?	Guidance on identification?	Guidance on Appraisal	Guidance on retention	Guidance on disposal	Guidance on migration	Guidance on preservation	Transfer to Archives	Prepare ER prog.	Establish link with Archives	Other
Defense	Records manager	Yes	No										
	Administrator	Yes	No										
	IT person	Yes	No										
Education	Records manager	Yes	No										
	Administrator	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No
	IT person	Yes	Yes	No	No	No	No	No	No	No	Yes	No	No
Entrepreneur	Records manager	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No	No	No
	Administrator	Yes	No										
	IT person	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Finance	IT personnel	Yes	Yes	No	No	Yes	No	Yes	Yes	No	No	No	No
Foreign Affairs	Records manager	Yes	Yes	No	No	No	No	No	No	No	Yes	No	No
	Administrator	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No
	IT person	Yes	No										
Health	Records manager	No											
	Administrator	No											
	IT person	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No	No	No
Housing	Records manager	No											
	Administrator	No											
	IT person	Yes	No										
Land	Records manager	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
	Administrator	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No	No
	IT person	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Multimedia	Records manager	No											
	IT person	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	No
Primary Industry	Records manager	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
	Administrator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
	IT person	Yes	Yes	No	No	No	No	No	No	No	No	No	No
Prime Minister's Department	Records manager	No	No										
	Administrator	Yes	No										
	IT person	Yes	No										

Ministry	Job title	Are ER held?	Is there guidance?	Guidance on identification?	Guidance on Appraisal	Guidance on retention	Guidance on disposal	Guidance on migration	Guidance on preservation	Transfer to Archives	Prepare ER prog.	Establish link with Archives	Other
Public Works	Administrator	No											
	IT person	Yes	No										
Science, Technology And Environment	Records manager	No											
	Administrator	Yes	No										
	IT person	Yes	No										
Transport	Records manager	Yes	No										
	Administrator	Yes	No										
	IT person	Yes	Yes	No	No	No	No	No	No	No	No	No	No
Youth and Sport	Records manager	Yes	No										
	Administrator	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	No	No	No
	IT person	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	No

Assistant Director of EG Development Division firmly believed that the National Archives was not ready to receive electronic records for preservation from the federal departments when she said, "how can we send the records to the Archives when we don't have the guidelines from them. So far the Archives has been very quiet on this issue, and we cannot transfer these records until such time that we are sure what to do with them, with standards and all that."[PMA1I02-25/7(48)]. This view was shared by the Head of Systems Division who stated "we don't transfer records to the National Archives because we don't receive any instructions from the top management"[PMIT2I02-15/7(59)]. When probed, the records manager insisted that he had communicated with the National Archives on matters pertaining to the transfer of paper records but not on electronic records [PMR1I01-2/7(78)].

The interview data corroborate the questionnaire data in terms of the existence of guidelines pertaining to ERM not only in the Prime Minister's Department but also across the federal government. Since the system practiced by the Prime Minister's Department reflected the larger scenario of management principles and procedures in all areas of government administration, including recordkeeping, it was not unreasonable to assume that the policy guidelines on electronic records in the 10 Ministries surveyed were based on internal directive rather than centralized coordinated directive from central agencies such as the National Archives or the Prime Minister's Department.

Nevertheless the existence of these internal directives implies that there are attempts, however inadequate or wanting, on the part of the different record keepers at formulating policies on ERM. The question is, can these policy guidelines provide record keepers with appropriate guidance on electronic records procedures? If not, there is need for training on the part of record keepers in order to gain knowledge and skills in the practical aspects of managing electronic records.

2.2.4 *Implementing electronic records work practices.* There is evidence to show that the records managers, administrators and IT personnel in the surveyed Ministries and across the surveyed Ministries carried out activities in areas such as identification, retention and disposal of records. Even though these are limited to the general aspects of

electronic records management, at least there are occasions where these key players recognized the importance of those work practices, and jointly implement them. For example, in the Ministry of Primary Industries, the records manager and administrator were jointly responsible for the identification of electronic records, appraisal, as well as record retention and disposal. In the case of the newly established Ministry of Youth and Sports, the IT personnel and the administrator were involved together in implementing electronic records management practices such as identification, retention, disposal and preservation.

Figure 8.7 indicates that the most frequent form of electronic records practices, such as migration, preservation and retention, received over half of the responses from eight record keepers who admitted responsibility for actually carrying out 12 practices listed in the questionnaire. Disposal and identification ranked low among the respondents. The low level of response for appraisal indicated that electronic records were not appraised in the surveyed Ministries. The breakdown of the data in the same table revealed that records managers were not actively involved in electronic records practices, as only two of them were involved. In any case, the involvement was limited to practices such as identification, retention, disposal and formulation of electronic records programme. In comparison, the IT personnel were more involved in the technical work processes such as migration and preservation. None of the record keepers have established any links with the National Archives due to lack of initiative on the part of both the Ministries as well as the National Archives.

The existence of ERM activities involving all three key players in question in the Ministries surveyed could well constitute a basis for the establishment of common education and training in ERM, and for ensuring that the work practices concerned comply with standard procedures.

3. The situation(s) in which the different record keepers managed electronic records

The data suggests that practices relating to identification, appraisal, retention, disposal, naming convention, metadata, preservation and migration were not carried out in the majority of the surveyed Ministries:

3.1 *Identification.* The low level of response on identification of electronic records as revealed in Figure 8.7 indicates that electronic records were not identified in the majority of the surveyed Ministries including the Prime Minister's Department. According to the Chief Assistant Director of EG Development Division, electronic records in her Ministry's systems were not identified. She raised this when discussing the appraisal process in the third interview. She mentioned twice that electronic records were not identified due to lack of guidance from the National Archives [PMA1I01-18/7(96)]. Similarly the Deputy Director of IT admitted twice in the second interview that the office automation systems in the Ministry did not have the facility to distinguish records from non-records [PMITI02-10/7(53)]. The Systems Division head's views on this matter indicated his lack of knowledge on electronic records when he admitted, "no, we don't identify electronic records here because we don't know whether the information is a record or not, we need some guidelines" [PMIT2I01-11/7(105)]. The issue of electronic records not being identified was also evident in the Head of Registry's statement to the effect that it was not his role to identify electronic records as he believed that to be the job of the IT personnel [PMR1I02-12/7(43)].

The quantitative as well as qualitative data gathered from the Prime Minister's Department suggests that electronic records were not identified as a matter of practice across the Ministries surveyed.

Figure 8.7. Electronic records practices carried out by the different respondents in the surveyed Ministries.

E-records practices	Administrators	IT personnel	Records Manager	Total
Identification	2	1	1	4
Creation	0	1	0	1
Appraisal	1	2	0	3
Retention	2	3	1	6
Disposal	2	2	1	5
Naming conventions	0	0	0	0

Metadata	0	0	0	0
Preservation	2	3	1	6
Transfer	0	0	0	0
Migration	1	5	0	6
Prepare e-records programme	0	2	2	4
Establish link with National archives	0	0	0	0
Other				

3.2 *Appraisal, retention and disposal.* The findings in Figure 8.7 present low level indicators for records management activities including appraisal (three of 41 respondents), retention scheduling (six of 41 respondents) and disposal (five of 41 respondents). This data indicates that appraisal, retention and disposal of electronic records were not significant activities in the surveyed Ministries. The Chief Assistant Director of EG Development Division's description of ERM activities carried out in her Ministry reflected the idea that electronic records were not appraised, scheduled and disposed of. She strongly believed that the processes of scheduling, appraising and disposal are part of archives management when she said, "... we are hoping that very soon the Archives will come out with some guidelines so that we the government departments have some clue what we should do when it comes to the process of selection" [PMA1I03-15/8(45)]. This reflects the Chief Assistant Director's views that the Prime Minister's Department and the federal government departments as a whole need guidance from the National Archives on this matter. The Deputy Director of IT confirmed that electronic records were not appraised because "we did the back up for everything, all the records, all the information in the system. This is our information policy. We do not select" [PMIT1I02-10/7(76)]. His subordinate, the Head of Systems Division said, "so far there is no retention schedule for the records, not even in the EGIT guidelines. So we keep everything but we make sure nothing is deleted." [PMIT2I02-15/7(44)]. The Head of Registry talked at length about scheduling and appraisal of paper records but finally admitted, "I am not sure who did this but it is certainly not the registry staff". [PMR1I02-12/7(34)].

3.3 *Naming conventions and metadata.* It is not surprising that none of the surveyed Ministries reported that practices regarding naming conventions and metadata were carried out in their Ministry, including the Prime Minister's Department. As part of recordkeeping requirements naming conventions for electronic filing systems and metadata (documentation of audit trails) of the systems should be built into the system design. The Chief Assistant Director of EG Development Division was asked whether the recordkeeping requirements were embedded into the EG five pilot projects of the Administrative Information System of Electronic Government. In the second interview with her, she repeatedly mentioned minimal recordkeeping requirements were built into the EG pilot systems because the National Archives was not involved in the planning stage [PMA1I02-25/7(48)]. The Deputy Director of IT on the other hand admitted, "yes, we have the government filing requirements, a standard filing system in the public sector that we applied in the systems" [PMIT1I02-10/7(19)]. Even though the Head of the Registry mentioned that record keeping requirements were embedded into Lotus Notes (the system in use currently), he mentioned twice that "the elements are so limited that they don't match the filing systems of paper records" [PMR1I01-2/7(59)]. When questions were asked to ascertain whether their systems captured and preserved together the context, content and structure of the records within the metadata elements, to ensure the authenticity and integrity of the records as evidence, on no occasion did the three record keepers answer to the point. The qualitative data implies that the different record keepers are confident that for the time being the reliability of the electronic records rests on the availability of physical paper records in the Prime Minister's Department [PMA1I02-25/7(25)], [PMA1I03-15/8(94)], PMIT1I02-10/7(55 & 85)], [PMIT1I02-10/7(113 & 127)], [PMIT2I02-15/7(70 & 76)], [PMR1I02-12/7(43 & 80)].

3.4 *Preservation and migration.* The data in Figure 8.7 shows significant involvement of the IT personnel and administrators in the technical aspects of ERM such as preservation and migration. This indicates that work on preservation and migration may have already been implemented in the Ministries surveyed. As in the case of the Prime Minister's Department, the Chief Assistant Director of EG Division repeatedly mentioned that the absence of guidelines on the preservation of electronic records is

preventing the government agencies from doing the right thing. She said, "... in the absence of proper guidelines on preservation, we took parallel measures like making back up copies and retaining the physical records" [PMA1I01-18/7(29)]. When asked about the facilities and practices surrounding the preservation of the records produced by the legacy system to avoid system obsolescence, surprisingly she said, "before the EG systems, all records were on paper, so we have to manage them according to the Archives Act.". On the other hand the Deputy Director of IT related the preservation of electronic records to the storage media. He said that magnetic tapes were used, and two back up copies were made [PMIT1I02-10/7(104)]. He believed this was part of the preservation measures for government electronic records. But in all the three interviews with him when questions were asked about how the systems ensure that the records are retrievable, accessible and readable by reserachers in the future, he said repeatedly, "technically all Ministries have to plan from now onwards, and the EG systems have taken this into consideration" [PMIT1I01-2/7(94)]. Giving his views on the same subject, the Head of the Systems Division explained his job in making back up copies of the records in accordance to the EGIT policy guidelines and standards. He admitted that these records were not transferred into any standard format for long term preservation. He also believed that migration from one system to another as a form of preservation measure was also absent [PMIT2I02-15/7(54)].

Early intervention by records professionals is a crucial aspect in the creation, maintenance, appraisal and preservation of electronic records. When asked who was involved in the design and development of the systems in the Prime Minister's Department for the EG and legacy systems during the third interview with the Chief Assistant Director of EG Development Division, she mentioned at least twice that 'only the IT people, administrators from leading agencies like Treasury and Public Services Department and IT consultants were involved' [PMA1I01-18/7(44)]. The Deputy Director of IT and his subordinate supported this view by confirming that on most occasions only the IT consultants, administrators and departmental IT personnel were involved [PMIT1I02-10/7(15)], [PMIT1I03-20/7(09)], [PMIT2I01-11/7(35)]. The Head of Registry recalled, "the consultant came to interview us when they were planning for

the EG pilot systems but we were not called for any meeting on this" [PMR1I01-2/7(98)]. Thus the records professional's early intervention in the system design and development was not evident, and therefore it is not surprising that electronic records were not identified, appraised and preserved in the Prime Minister's Department. It is reasonable to assume the same thing happened in the surveyed Ministries based on the findings of the survey data discussed above.

However, further examination of the quantitative data in Figure 8.7 indicates the records managers' involvement in other related areas which are different from that of IT personnel and administrators, such as work concerning the formulation of electronic records programmes in their Ministries, and establishing links with the National Archives. The records managers' involvement in these areas is indicative of their constant communication with the National Archives with regard to the management of paper records and their long established responsibility which will continue because a lot of paper records, need to be managed. However, the scope of their communications with the National Archives should be expanded to include electronic records.

4. Education and training to support the record keepers' roles and responsibilities in managing electronic records.

As evident from the survey findings in Figure 8.8, almost half of the key players surveyed (16 out of 41) had received some form of relevant education and/or training. Across Ministries, workshops and seminars are very clearly the most frequent or popular forms of education/training, and over half of the education/training received was via customized programs (seminars with 15 responses, workshops with 13 responses). Conferences were a less frequent form of disseminating knowledge (as indicated by eight responses) in comparison to seminars and workshops. Education and training in electronic records management appeared not to have become established as part of many induction programs to date because only one record keeper believed that he/she had attended this type of training (the IT personnel from the Ministry of Housing and Local Government). And only one person, an IT player from the Ministry of Multimedia, had undertaken a relevant accredited programme.

The answers on the sufficiency of existing education and training programmes varied between respondents. Not all agreed the education and training received were sufficient for them to support their roles and responsibilities on electronic records. Even though the overall data in Figure 8.8 indicates that out of 22 record keepers who received education and training, 13 believed the education and/or training they have received was sufficient (which was made up of five records managers, four administrators and four IT personnel), a question arises pertaining to the content of the education and training received. If these were sufficient then why, in the majority of the surveyed Ministries, (as discussed in point 3 above) were work practices on ERM not carried out?

On the other hand, the other half of the surveyed record keepers (in six of the total 15 Ministries) believed they did not receive any education and training, and that they should be given appropriate education and training so that they could fully understand their roles and responsibilities in this specialized area and together could perform these roles and responsibilities effectively when the EG would be fully operational in 2005. When views on these issues were sought from the respondents in the open ended question in the

Figure 8.8. Education and training received.

Ministry/Job title	Workshops	Seminars	Conferences	Customised programmes	Induction	Other	Education/ training is sufficient
Defense							
Administrator	No	No	No	No	No	No	
IT personnel	No	No	No	No	No	No	
Records manager	No	No	No	No	No	No	
Education							
Administrator	Yes	Yes	Yes	Yes	No	No	Yes
IT personnel	No	No	No	Yes	No	No	No
Records manager	Yes	Yes	No	No	No	No	Yes
Entrepreneur							
Administrator	Yes	Yes	Yes	No	No	No	No
IT personnel	Yes	Yes	No	No	No	No	Yes
Records manager	Yes	Yes	No	No	No	No	Yes
Finance							
IT personnel	No	No	No	No	No	No	
Foreign Affairs							
Administrator	No	No	No	No	No	No	

IT personnel	No	No	No	No	No	No	
Records manager	Yes	No	No	No	No	No	No
Health							
Administrator	No	No	No	No	No	No	
IT personnel	No	No	No	No	No	No	
Records manager	No	No	No	No	No	No	
Housing	No	No	No	No	No	No	
Administrator	No	Yes	No	No	Yes	No	Yes
IT personnel							
Records manager	No	No	No	No	No	No	
Land							
Administrator	Yes	Yes	Yes	No	No	No	Yes
IT personnel	No	No	No	No	No	No	
Records manager	Yes	Yes	Yes	No	No	No	Yes
Multimedia							
IT personnel	No	No	No	Yes	No	Accredited	No
Records manager	No	No	No	No	No	No	
Primary Industry							
Administrator	Yes	Yes	Yes	No	No	No	No
IT personnel	Yes	Yes	Yes	Yes	No	No	Yes
Records manager	Yes	Yes	No	Yes	No	No	Yes
Prime Minister's Department							
Administrator	Yes	Yes	No	No	No	No	No
IT personnel	No	No	No	No	No	No	
Records manager	No	No	No	No	No	No	
Public Work							
Administrator	No	No	No	No	No	No	
IT personnel	No	No	No	No	No	No	
Science							
Administrator	No	No	No	No	No	No	
IT personnel	No	No	No	No	No	No	
Records manager	No	No	No	No	No	No	
Transport							
Administrator	No	Yes	No	No	No	No	Yes
IT personnel	No	No	No	No	No	No	
Records manager	No	No	No	Yes	No	No	Yes
Youth & Sports							
Administrator	Yes	Yes	Yes	No	No	No	Yes
IT personnel	No	Yes	Yes	No	No	No	Yes
Records manager	No	No	No	No	No	No	

questionnaire, the majority of respondents (12 of the 20 who responded) suggested that government staff should be given training on electronic records.

However, closer examination of the data in Figure 8.8 shows that the record keepers in the Prime Minister's Department did not have any education or training in ERM, except for the administrator who had attended workshops and seminars on electronic records. It was felt generally that workshops and seminars alone were not sufficient to support the administrator's roles and responsibility in regard to electronic records.

The interview data with the different record keepers in the Prime Minister's Department drew attention to the following issues: the record keepers' need for education and training; present level of knowledge and skills of IT personnel and their need for education and training; and records manager's insufficient professional preparation for managing electronic records.

4.1 *The administrative staff's lack of knowledge of ERM.* As a senior administrator who is responsible for the implementation of the EG pilot projects in the public sector, the Chief Assistant Director of EG Development Division emphasized her concern regarding the lack of knowledge on the part of the new and junior staff in the government when she was specifically asked about the education and training of record keepers in the Prime Minister's Department and generally about the same matter within the public sector as a whole. At one point when asked about this subject, she agreed that the new staff lacked knowledge on records management, about which she related her concern that, "the new staff come in with no idea as to the requirements of the physical records. As we the older people retire that's the danger; that's why I want to start the whole thing rolling" [PMA1I01-18/7(54)].

To the Chief Assistant Director of EG Development Division, the staff's lack of knowledge about records management seems to be very serious, because repeatedly she mentioned her fear of what would happen if a senior staff and administrator like her goes on retirement: "what if we all retire over the next five years, and a whole new batch comes into government service not knowing the value of records? The government will be in trouble" [PMA1I01-18/7(80)]. She lamented the lack of knowledge about paper records management due to lack of training. She recalled, "...the young clerks recruited into the government departments don't know the value of records. Nobody seems to

bother to organise training" [PMA1I02-25/7(43)]. As a result of the lack of knowledge on the part of government staff on records management, the Chief Assistant Director decided to send her officers for training [PMA1I02-25/7(51)], [PMA1I02-25/7(59)].

Other than her fear and frustration over the staff's lack of knowledge about records management, the Chief Assistant Director suggested that every staff member must be made aware of the importance of records management; that the staff must possess knowledge on this subject, and not only on electronic records management. She said the government as a whole must be concerned because, "... these are our records and these are evidence you see. Records are created by everybody at different levels, so we have to maintain them. Everybody has to be made aware of this, everybody." [PMA1I01-18/7(18)]

To verify further the record keepers' lack of knowledge and training on ERM in the Prime Minister's Department, a question was asked on the training and specialization of those record keepers involved in managing electronic records, to which the Chief Assistant Director of EG Development Division said, "only training on how to use the systems. That's all." [PMA1I02-25/7(20)]. In answering a follow up question specifically on the availability of electronic recordkeeping training, she confirmed her first answer by saying, "there is no training whatsoever, we just know that we have to keep the records because we are the senior ones. Like we are having the project, we are fully aware that we have to keep these records" [PMA1I02-25/7(25)].

What is clear from her response is that despite the lack of training on electronic records, the senior staff like her are fully aware that electronic records need to be kept, and that the Prime Minister's Department is responsible for the EG project. When asked about the training needs for new staff, she said they were trained on the software product and nothing specifically on ERM [PMA1I01-18/7(67)].

In response to a question about the need for a policy on training, the Chief Assistant Director of EG Development Division emphasized the roles and responsibility of the National Archives in this matter when she said, "I don't think we are looking into policy

matters because it is the portfolio of the Archives, so the Archives has to come in to make sure that our staff are trained through more rigorous outreach programmes" [PMA1I02-25/7(34)].

This quote suggests that the National Archives should be involved in a rigorous outreach programme concerning ERM. The Chief Assistant Director was probed further in order to obtain verification and confirmation on the absence of any form of education and training to support the roles of the three categories of records keepers in managing electronic records. She said with disappointment, "I don't know for EG systems, the GEO, HRMIS and the rest, I don't see anyone coming. We have contacted the Archives; last week we called them up, we keep on informing but nobody came" [PMA1I03-15/8(34)].

In response to another question regarding whether currently her Unit was working with the National Archives on education and training for the key players in question, the Chief Assistant Director of EG Development Division said, "no nothing, I don't think so." [PMA1I03-15/8(48)]. To verify further if training in the area of creation, maintenance, appraisal and preservation of electronic records was adequate for the different record keepers, the Chief Assistant Director of EG Development Division explained the situation: "for paper records I think it is sufficient, for electronic records it is not sufficient because much of the present training is focused on systems requirements and IT rather than on ERM" PMA1I03-15/8(57)].

When a follow up question was posed to the Chief Assistant Director of EG Development Division on what measures had been taken to make sure education and training was adequate in order to support the record keepers' roles and responsibilities on electronic records, she replied, "so far, we have only insisted on the vendor to provide the training on EG applications. That's all" [PMA1I03-15/8(65)].

To the question of how best education and training of record keepers in ERM should be provided, the Chief Assistant Director of EG Development Division responded that the National Institute of Public Administration (INTAN) could play a role in providing

education and training for staff in the public sector. She expressed her wish by saying that, "other than the Archives, usually when INTAN takes in new staff, all the staff go through them for training especially for those in the Diplomatic and Administrative Officers services. I think INTAN should be the conduit for this to help the Archives. They should have on-line help, they should have e-tutorials, apart from face to face kind of workshops. They have to instill in all the new recruits, instill in them the importance of managing records, not only electronic but paper also." [PMA1I03-15/8(70)].

The Chief Assistant Director's general comments on this issue unveiled intriguing facts about the National Archives' role in providing record keepers with training. She felt that even the basic training on conventional records was not provided for the government staff. She lamented that, the Archives provided very little training for record keepers, be it physical or electronic. Our Archives is not having it now. Last time, good old days, I remember when I started off in the seventies, we used to have training on record keeping. Now what has happened? Have we moved away from that? Not even the basic we have" [PMA1I03-15/8(83)].

Data from the interviews confirms that the Chief Assistant Director is fully aware of the importance of record management which she relates to accountability, and the importance of education and training for the record keepers in government agencies. She strongly believed that the National Archives and INTAN could play their roles in providing education and training on both paper and electronic records for all government staff at all levels to support their roles and responsibilities in managing both types of records (paper and electronic).

4.2 *IT personnel's lack of awareness, knowledge and skills in ERM.* As a senior officer in charge of the IT Sector in the Prime Minister's Department, the Deputy Director was fully aware that the IT personnel needed knowledge and skills to manage electronic records. In particular, he felt that in the next five years his department staff resources should consist of a combination of those knowledgeable and aware of the recordkeeping aspect in addition to the technical skills. He said, "We should have a combination of IT people and people who know about records and how to manage these records. Right

now, I think the IT people are generally aware of the records, but as for the details, they need to learn." [PMIT1I03-20/7(28)]. He believed that his Ministry and the other Ministries had not developed any awareness and training programmes, particularly for electronic records management, and he also indicated that IT personnel in government should be provided with the facility to gain knowledge and skills in this area [PMIT1I03-20/7(40)].

During the discussion on this subject, the Deputy Director of IT appeared to recognize the inadequacy of knowledge and skill on the part of the IT personnel in managing electronic records. He referred to the "lack of training in this specialized area" [PMIT1I0-20/7(43)]. When asked about the types of training the IT personnel had so far received, he replied, "...we are very technical people who are concerned about the technical aspects of systems. So the training they received pertains to the creation and maintenance of information systems based on the EGIT policy guidelines. These are the priorities." [PMIT1I03-20/7(44)].

The Head of Systems Division verified and further supported the views of his Deputy Director on the inadequacy of the IT personnel's knowledge of electronic records by saying, "no, not adequate. What we need urgently is the awareness on records, right now this is lacking among the IT personnel. A formal well organized awareness and training programme is important to establish" [PMIT2I02-15/7(69)].

An interesting point was raised by the Head of Systems Division in this regard, "love for the records" should be instilled among the IT personnel to create the feelings for the records which was to him obviously lacking. He said, "... training should lead to an appreciation of the records. If the staff do not appreciate the records, they won't recognize the value of records. Appreciation of records will create a feeling of love for records. This feeling should be inculcated among the IT personnel" [PMIT2I02-15/7(84)]. He added that, "the National Archives should provide a well organized training programme" [PMIT2I01-11/7(40)].

In addition to the above suggestion, the Head of Systems Division stressed the importance of the National Archives' role and responsibility in the formulation of a special training strategy in view of the EG. For example he said, "...like the way the IT security aspect is the domain of the Office of Chief Security Officer from MAMPU that takes care of the security of information in the various application systems in government agencies. Likewise, Archives should also be involved in this sort of activities and functions. They should know what's going on in here so that they will be able to provide training on the overall aspects of EG records" [PMIT2I01-11/7(54)].

Like the Chief Assistant Director of EG Development Division, the Head of Systems Division believed that INTAN should be able to assist in providing education and training for the IT personnel. He said, "IT staff should be sent for training but in my opinion, in INTAN's training programme for the IT personnel, they should include one module on electronic records management or record keeping. Then it will make an impact because INTAN is the nation wide education and training centre for all categories of civil servants. INTAN is the most appropriate place but with input from the Archives of course." [PMIT2I01-11/7(118)]. However, in a further discussion with him on this subject, the Head of Systems Division stressed the importance of practical skills when he said, " the practical approach of how to manage these records according to particular standards (the hands on) is important; for example, it is important to know how to preserve, how to select and what to select. The skill is important, not just to be aware of it" [PMIT2I02-15/7(93)]

Views and comments from the IT personnel in the Prime Minister's Department indicate their lack of awareness, knowledge and skills in ERM. At the same time they believed that education and training for IT personnel in ERM should be provided by INTAN with professional input from the National Archives.

4.3 *Records managers' professional preparation to manage electronic records.* The professional preparation of the records manager to manage electronic records in the Prime Minister's Department and in other federal Ministries is very important. In the case of the Prime Minister's Department, the Head of Registry did not have access to

courses related to ERM. He was not exposed to any aspects of electronic records, be it theory or practice. He felt that his knowledge on electronic recordkeeping and ERM was inadequate to enable him to lead the ERM programme in the Prime Minister's Department. While he had attended and participated in numerous seminars, conferences, and workshops on organizational management in 12 years of his service, he had attended no courses specifically on ERM. When asked about whether he was given sufficient training in electronic recordkeeping and management, he said, "I have attended courses on public policy, another one on strategic planning. There were courses on quality management, and human resource management organized by INTAN. So what I have learnt so far was very much on-the-job learning at the National Archives in the area of conventional records including work such as preparing inventory and transfer lists. I think I also picked up most of it on my own, but on electronic records, there was nothing, no training so far. No instruction on attending such training, may be because I am not involved" [PMR1I01-2/7(37)].

An examination of the list of courses he had attended after being appointed as records manager revealed a gap in the Head of Registry's professional development. There was no course related to ERM even though he was in constant contact with the National Archives with regard to appraisal and transfer of conventional records. He had wide experience working at the different Ministries as administrator cum records manager under the scheme of ADS. However, he was not thoroughly prepared for ERM.

Due to the lack of training and awareness of electronic records, the Head of Registry did not seem to understand that actually it was his role to facilitate or direct the management of electronic records because he was the records manager who was in charge of the overall management of all types of record in the Prime Minister's Department based on Government Circular Letter No. 1/1997. Due to his lack of knowledge and awareness on this matter he thought that it was the IT personnel's responsibility to manage those records. He believed that his job was only to manage paper records because he was not assigned the responsibility for any thing else. Nevertheless, he found this issue on

education and training in electronic records to be very important for all the staff in his registry [PMR1I02-12/7(56)].

He strongly felt that his staff must have not only the knowledge but also the skills in managing paper and electronic records, as both types of records were being used together in their daily routines. He drew attention to the lack of training for the records staff on electronic records when he said, "We do not have it on our own but we did liaise with MAMPU, but so far there is nothing, no training specifically for electronic records." [PMR1I02-12/7(62)]

When asked what he saw as the main issues the Prime Minister's Department faced with regard to records management, he replied that awareness and training were important issues because not every member of the staff was aware about records management. He suggested that the nature of the training that he and his staff had so far received was limited to a certain application related to their work, i.e in the area of automated registry system. He insisted that training in ERM must be provided for all the staff, especially the IT personnel (who created the information systems), on the basis of partnership; because he believed that somehow or other everybody would be in contact with electronic records in their daily routine [PMR1I02-12/7(65)].

5. Conclusion

In summary:

5.1 *Lack of understanding of roles and responsibilities by the different record keepers* provides a strong reason for the provision of an integrated education and training programme in order for the different record keepers to have a collective understanding of their respective roles and responsibilities for the records. Otherwise, they will not understand how to manage electronic records in their respective Ministries.

5.2 *Evidence of shared and separate responsibilities* for looking after the records, administrative oversight of the records, issuance of electronic records policy and implementation of electronic work practices, should provide a foundation for the different

record keepers to further understand their shared and individual responsibilities for electronic records. One possible way to make the different record keepers carry out their combined roles and responsibilities effectively is through combined education and training in ERM.

5.3 *The situation in which practices pertaining to identification, appraisal, retention, disposal, naming conventions, metadata, preservation and migration* were not carried out in accordance to records management standard practices in the majority of the surveyed Ministries and in the Prime Minister's Department, provides a strong reason for the different record keepers to gain knowledge and/or skills together through specific education and training in ERM, so that they could understand their respective roles and responsibilities for ERM. In the present situation, ERM work practices were not carried out because limited recordkeeping requirements were embedded into systems design as records practitioners were not involved in the development of the EG and legacy systems as evident in the data from the Prime Minister's Department. If the situation was not remedied, the Malaysian government may not have its electronic records.

5.4 *Insufficiency of education and training received by the different record keepers.* Even though the quantitative data indicates that the majority of those who received education and training in ERM believed that it was sufficient to support their roles and responsibilities, the data suggests the same record keepers did not carry out ERM practices in their respective Ministries. These record keepers needed to be made aware of their roles and responsibilities and this was deemed possible through a common education and training on ERM.

5.5 *The administrative staff lack knowledge of ERM.* The interview data from the Prime Minister's Department strongly suggests that administrative staff at all levels of government especially the junior officers, lacked knowledge and skills not only about electronic records but also about conventional records management, due to the failure of the National Archives in providing the requisite training. This provides another strong

case for education and training for administrative staff across the Malaysian government on ERM.

5.6 *IT personnel lack awareness, knowledge and skills in ERM.* The interview data from the IT personnel in the Prime Minister's Department recognized that IT personnel, not only in the Prime Minister's Department but also across the Malaysian government, lacked awareness, knowledge and skills in ERM. They expressed the need for IT personnel to gain knowledge and skills according to standard procedures from the National Archives and INTAN. Again the data suggested the IT personnel needed education and/or training on ERM.

5.7 *Records manager's insufficient professional preparation to manage electronic records.* The Head of Registry's lack of knowledge and skills in ERM helped relegate the idea of developing ERM to the bottom of the Prime Minister's Department's list of priorities. He recognized the need for education and training for all records staff and those in systems creation and believed roles and responsibilities linked to ERM should be carried out on a partnership basis. This provided yet another case for records staff to acquire knowledge and skills with other key players under a common education and training programme in ERM.

Overall, the quantitative data from the surveyed Ministries and the qualitative data from the Prime Minister's Department present evidence for a strong case to bring the records managers, administrators and IT personnel together in the common pursuit of knowledge and skills to manage electronic records at the appropriate level of detail and in appropriate areas of the subject so that they can perform their common as well as divergent responsibilities in the EG context effectively.

CHAPTER NINE

FINDINGS OF SURVEY AND IN-DEPTH INTERVIEWS IN THE NATIONAL ARCHIVES OF MALAYSIA

This chapter presents the quantitative and qualitative data gathered from the archivists at the National Archives of Malaysia. It highlights the Malaysian record keepers' need for knowledge and skills in ERM and relates to the second objective of the study. Similarly to Chapter Eight, patterns detected in both types of data are reported concurrently in order to provide a link between the evidence.

1. Introduction

To fulfill the second aim and objective of the study, quantitative data in the fourth phase of the study were collected from the survey questionnaire of the archivists in the National Archives of Malaysia from 10th December to 10th January 2003 (see Appendix 5). The in-depth face to face interviews with the Director-General, the Director of Procurement and AV Archives Division, Director of the ERM & IT Division, Head of the Electronic Records, Standard and Inspectorate Unit, Head of Electronic Records, Social and Economic Sector and Head of IT Unit were conducted from December 2002 to January 2003 (see Appendix 9). The interviews were carried out at the National Archives of Malaysia.

The findings are presented according to three main areas of investigation. These are: (a) to investigate and identify the roles and responsibilities of the different record keepers over electronic records, (b) to investigate the situation in which the different record keepers manage electronic records and (c) to identify whether the record keepers received adequate education and training to support their roles and responsibilities to manage electronic records.

2. The roles and responsibilities of the different record keepers (archivists) over electronic records

The findings were that although archivists had clearly laid out roles and responsibilities in terms of electronic records but they were not always discharging them. This is evident

from the data analysed, pertaining to the prime roles and responsibilities of archivists: responsibility pertaining to the National Archives' own electronic records, responsibility pertaining to the Federal Government electronic records of archival value, providing advisory services to government on electronic records and involvement in EG projects.

2.1 *The archivists have roles and responsibilities over electronic records but may not be discharging them.*

2.1.1 *Prime roles and responsibilities*

Responses in Figure 9.1 showed that 20 out of 41 respondents (48.8%) comprising eight *Archivists*, five *Directors* and seven *Heads* were responsible for managing paper records; five of them (12%) comprising two *Archivists*, one *Director* and two *Heads* were responsible for managing electronic records. Five of them (12%) comprising two *Archivists*, one *Director* and two *Heads* reported that they managed both paper and electronic records; and 11 of them (26%) comprising three *Archivists* and six *Directors* managed paper records together with other types of records such as audio visual records, photographs, maps and plans. Finally, two *Heads* reported that they only managed other types of records i.e audio visual records.

The survey data on Figure 9.1 showed that managing paper records constituted the prime responsibility of a majority of archivists at the National Archives of Malaysia. It is interesting to note that the responsibility for managing electronic records devolved not only to the ERM & IT Divisions, but other Divisions as well. Five of the archivists comprising one from the Access Division; one from the Finding Aids Division; one from the Procurement Division (*Director*) and one from Human Resource Division (*Head*); and one from the Administrative Division. The responses indicated the existence of two systems, namely the COMPASS (an electronic finding aids program managed by the respondents from the Procurement, Access and Guide Divisions) and the SISPEN (an electronic human resource programme made available by the Public Services Department for the use of the Administrative Department, as well as Human Resource Unit for all the Malaysian Ministries and departments).

Figure 9.1. Profile of archivists in relation to ERM

Job title	Division	Length of service	Place of attachment	Prime responsibility	Involvement in EG project	Advising government on ERM
Archivist	Training	12	Headquarters	Managing paper records	No	No
Archivist	Training	17	Headquarters	Managing paper records	No	No
Archivist	Access	17	Headquarters	Managing paper and e-records	No	No
Archivist	Guide	2	Headquarters	Managing paper and e-records	No	No
Archivist	ERM & IT	13	Headquarters	Managing paper records	Yes	Yes
Archivist	Repository	6	Headquarters	Managing paper records and AV	No	No
Archivist	ERM & IT	18	Headquarters	Managing e-records	Yes	Yes
Archivist	ERM & IT	1	Headquarters	Managing paper records	No	Yes
Archivist	ERM & IT	17	Headquarters	Managing e-record	Yes	Yes
Archivist	Conventional Record	18	Headquarters	Managing paper records, maps and plans	No	No
Archivist	Conventional Record	17	Headquarters	Managing paper records, maps and plans	No	No
Archivist	Conventional Record	9	Headquarters	Managing paper records, maps and plans	No	No
Archivist	Acquisition	15	Headquarters	Managing paper records	No	No
Archivist	Prime Gallery	2	Memorial Tunku	Managing paper, AV, photographs	No	No
Archivist	Prime Gallery	18	Memorial Tunku	Managing paper, AV, photographs	No	No
Director	Kedah State	20	Branch Office	Managing paper, AV, photographs, maps and plans	No	No
Director	Johore State	25	Branch Office	Managing paper, AV, photographs, maps and plans	No	No
Director	Procurement	29	Headquarters	Managing paper and e-records	No	No
Director	Perak State	21	Branch Office	Managing paper, AV, photographs, maps and plans	No	No
Director	Sabah State	17	Branch Office	Managing paper, AV, photographs, maps and plans	No	No
Director	Conservation	24	Headquarters	Managing paper records and AV	No	No
Director	Penang State	10	Branch Office	Managing paper, AV, photographs, maps and plans	No	No
Director	ERM & IT	28	Headquarters	Managing e-records	Yes	Yes
Director	Memorial	15	Headquarters	Managing paper, AV, photographs	No	No
Director	Sarawak State	13	Branch Office	Managing paper, AV, photographs, maps and plans	No	No

Director	Heroes' Gallery	20	Headquarters	Managing paper, AV, photographs	No	No
Job title	**Division**	**Length of service**	**Place of attachment**	**Prime responsibility**	**Involvement in EG project**	**Advising government on ERM**
Director	Prime Gallery	25	Headquarters	Managing paper records	No	No
Director	Memorial	25	Headquarters	Managing paper records	No	No
Head	Human Resource	19	Headquarters	Managing paper and e-records	No	No
Head	ERM & IT	24	Headquarters	Managing e-records	Yes	Yes
Head	ERM & IT	21	Headquarters	Managing e-records	No	Yes
Head	ERM & IT	20	Headquarters	Managing paper records	No	Yes
Head	Repository	21	Headquarters	Managing other records (AV)	No	No
Head	Conventional Record	20	Headquarters	Managing paper records	No	No
Head	Conventional Record	20	Headquarters	Managing paper records	No	No
Head	Administrative	20	Headquarters	Managing paper and e-records	No	No
Head	Acquisition	25	Headquarters	Managing paper records	No	No
Head	Guide	18	Headquarters	Managing paper records	No	No
Head	Access	22	Headquarters	Managing paper records	No	No
Head	AV Centre	21	Headquarters	Managing AV records	No	No
Head	Exhibition	21	Headquarters	Managing paper records	No	No

The findings revealed that even though the prime responsibility for managing electronic records officially was devolved to the ERM & IT Divisions, archivists in the other Divisions were beginning to get involved for administrative reasons.

2.1.2 *Responsibility pertaining to the National Archives own electronic records*

To confirm the above findings, this part of the survey sought to find out whether the archivists at the National Archives were practically involved in looking after their own electronic records which they created, maintained and used in their day to day administration.

Figure 9.2. Summary of roles and responsibility.

Job title	Division	Your Division create ER?	Are you responsible?	Are others responsible?	Are ER of Federal Government in custody?	Who are responsible?	Have you had any education & training in ER?	Has the person in charge had any education & training on ER?
Archivist	Training	Yes	Yes, which I created	No	No		No	
Archivist	Training	Yes	Yes	No	No		Yes	
Archivist	Access	No		No	Yes	IT Unit		Visits/study tour
Archivist	Guide	Yes	Yes	No	No		Yes	
Archivist	ERM& IT	Yes	No	Creators	No		Yes	No training
Archivist	Repository	Yes	Yes	No	Yes	IT Unit	Yes	Do not know
Archivist	ERM & IT	Yes	No	Division in charge	Yes	Division in charge	Yes	Not sure
Archivist	ERM & IT	Yes	No	Division in charge	Yes	Division in charge	Yes	Not sure
Archivist	ERM & IT	Yes	No	Creators	No		Yes	No
Archivist	Conventional Record	No			No		No	
Archivist	Conventional Record	No			No		No	
Archivist	Conventional Record	No			No		No	
Archivist	Acquisition	Yes	No	Creators	No		No	No training
Archivist	Prime Gallery	No			No		No	
Archivist	Prime Gallery	No			No		No	
Director	Kedah State	Yes	Yes		Yes	IT personnel	Yes	Technical
Director	Johore State	Yes	Yes		Yes	IT Unit	Yes	No training
Director	Procurement	No			No		Yes	
Director	Perak State	Yes	Yes		Yes	IT Unit	Yes	No
Director	Sabah State	Yes	No	Creators	Yes	IT Unit	No	None
Director	Conservation	Yes	No	Staff concerned	No		No	No training
Director	Penang State	Yes	No	Those who created the records	Yes	IT Unit	No	None
Director	ERM & IT	No			Yes	Repository	Yes	No
Director	Memorial	No			No		No	
Director	Sarawak State	Yes	No	Administrative staff	Yes	IT Unit	No	No
Director	Heroes' Gallery	No			No		No	

Job title	Division	Your Division create ER?	Are you responsible?	Are others responsible?	Are ER of Federal Government in custody?	Who are responsible?	Have you had any education & training in ER?	Has the person in charge had any education & training on ER?
Director	Prime Gallery	No			No		No	
Director	Memorial	No			No		No	
Head	Human Resource	Yes	Yes		No		Yes	
Head	ER & IT	Yes	No	IT Unit	Yes	IT personnel	Yes	No training
Head	ER & IT	Yes	No	Creators	No		Yes	No training
Head	ER & IT	Yes	No	Staff/creators	No		Yes	No training
Head	Repository	Yes	Yes		Yes	IT Unit	Yes	Not sure
Head	Conventional Record	Yes	Yes		No		No	
Head	Conventional Record	Yes	No	Staff	Yes	Guide Division	Yes	No
Head	Administrative	Yes	Yes		No		Yes	
Head	Acquisition	Yes	Yes		No		No	
Head	Guide	Yes	No	IT personnel	Yes	IT personnel	No	System management
Head	Access	Yes	No	IT personnel	No		Yes	Information system management
Head	AV Centre	No			No		No	
Head	Exhibition	No			No			

A series of questions was asked, beginning with the question "does your department create records/documents in electronic form?" Figure 9.2 showed that out of 41 respondents, 14 of them comprising of six *Archivists*, six *Directors* and two *Heads* thought that the National Archives did not create electronic records. Of those who answered "no" to the question, three were from the Conventional Records Division (all three were *Archivists*) , seven from Memorial Centre (two *Archivists*, four *Directors* and one *Head*); one from Procurement Division (*Director*); one from AV centre (*Head)*; and one from Access Division (*Archivists*). It is interesting to note that all of these respondents were positioned at the headquarters. Surprisingly the *Director* of the ERM & IT Division also believed that the National Archives did not create its own electronic records. This might be based on his perception that, in a true sense, transactional records in the Archives were not created and maintained in accordance to standard

practices and procedures (based on data obtained through interview). This being the case, it was not unreasonable to assume that the other 12 respondents who gave the same answers also had similar perception.

Data analysis of the positive responses showed that 27 of 41 respondents believed that the National Archives did not create its own electronic records. Interestingly, all the six *Directors* from the Branch offices recognized the existence of electronic records in their respective offices. This was contradictory to the response of the other seven *Directors* who were all attached to the headquarters (one from Procurement, one from ERM & IT Division, one from Conservation and four from Memorial), who believed otherwise (see Figure 9.2). It was reasonable to assume, that the *Directors* at the headquarters may not themselves created electronic records. On the contrary, the *Directors* at the Branch offices would had created and maintained records in the course of their daily Administrative tasks (they did not have personal assistants or junior archivists at their disposal)[2].

However, those *Directors* attached to the headquarters had their own personal assistants who generated and created records on their behalf. They hold a higher position (S54) as compared to the S48 *Directors* at the Branch offices. This situation might influenced their answers to the question.

In relation to the question of responsibility for looking after those records, of the 27 who believed that electronic records existed in their organization, only 12 thought they had responsibility for them. The majority of them (15) suggested that they were not responsible, as those records were being looked after by others: 10 respondents (three *Archivists*, four *Directors* and three *Heads*) thought that those records are looked after by the creators, two (*Archivists*) believed the Division in charge was responsible, one (*Head)* suggested the ERM & IT Division was responsible; and two (*Heads)* believed that the IT personnel were in charge. The data implies that the archivists at the National

[2] The Branch offices are managed by one professional archivist only (Director). He/she is assisted by non professional staff at a lower level.

Archives agreed on matters relating to their own electronic records, generated in the course of conducting their daily administrative responsibilities and similarly on matters pertaining to those responsible for looking after them.

Only 12 respondents comprising four *Archivists*, three *Directors* and five *Heads* of Divisions responded positively to the question "does your department create records in electronic form?" and "are you responsible for looking after the records?" Of these, two *Archivists* were from the Training Division; and one each from the Finding Aids Division and the Repository; four were from the ERM & IT Division; and one from the Acquisition Division. The data in Figure 9.2 showed that whilst 27 respondents thought that the National Archives created its own electronic records, only 12 of them believed that they were responsible for looking after them. Those who responded positively to both questions obviously believed that the use of computers for their daily work, automatically allowed them to create and maintain their own electronic records. But this perception was not shared by all respondents.

2.1.3 *Responsibility for electronically generated Federal records of archival value*

Questions were asked on whether the National Archives housed public records of enduring value in electronic format. This question was asked in order to ascertain the respondents' roles and responsibilities as far as public records of archival value are concerned.

The data in Figure 9.2 showed that of the 41 respondents only 36% (15) respondents comprising four *Archivists*, seven *Directors*, and four *Heads*) believed that the National Archives housed public records of archival value in the electronic format; while the majority (comprising 26 respondents which made up 64% believed otherwise. They are four *Archivists* (one from Access Unit, two from ERM & IT Division and one from the Repository); out of seven *Directors*, six of whom are from the state Branches claimed that their Branch offices housed electronic records. Surprisingly this time , the *Director* of the ERM & IT Division also gave a positive answer together with four other *Heads* (one from ERM & IT Division, one from Repository, one from Conventional Records

Division and one from the Finding Aids Division). It was clear that respondents had no common answer to questions on electronic records in their custody. When asked "who are responsible for looking after the electronic records of the federal government in the custody of the Archives", surprisingly, none of those who believed that the National Archives held electronic records (15), accepted responsibility for looking after the records. Even the respondents from the ERM & IT Division (two *Archivists,* one *Director* and one *Head*) disclaimed responsibility. Out of the fifteen, 75% (11) thought that the IT Division was responsible. The data suggests that IT Division plays a significant role in looking after public records in electronic format. However, the issue of the requisite knowledge and skills needed by the personnel for managing the records in accordance to archival standards and practice needed to be probed. From the interview with the *Director* of the ERM & IT Division, the data revealed that none of the IT personnel at the IT Unit had any training on the management of electronic records.[3]

2.1.4 *Advising government on electronic records*

In order to ascertain further the respondents' responsibilities for public records in the electronic environment, questions were asked on their involvement in advising government on electronic records. The purpose of these questions was to identify who was responsible and the kind of advise given, in order to discover the extent of the respondents' roles and responsibilities in relation to electronic records.

Figure 9.3 showed that out of 41 respondents only eight (19%) were involved. They comprised four *Archivists*, one *Director* and three *Heads*. It was not surprising that all the respondents were attached to the ERM & IT Division (see Figure 9.1). Considering the size of the Malaysian government machinery, one would wonder if the staff strength was sufficient enough for the National Archives to have been able to play a significant role in advising the government on ERM. By comparison, the staffing level for electronic records in other National Archives was also very low. For example, the findings of the survey in phase 1 indicated that in the UK National Archives, the IT

[3] There were only 3 Information Systems Officers and 1 Assistant Information Officer manning the IT Division of the National Archives (http:www.arkib.my/bm/profil/menegnaikamibadan 1.htm)[23/01/2005].

Figure 9.3. Respondents' level of involvement in advising government on ERM

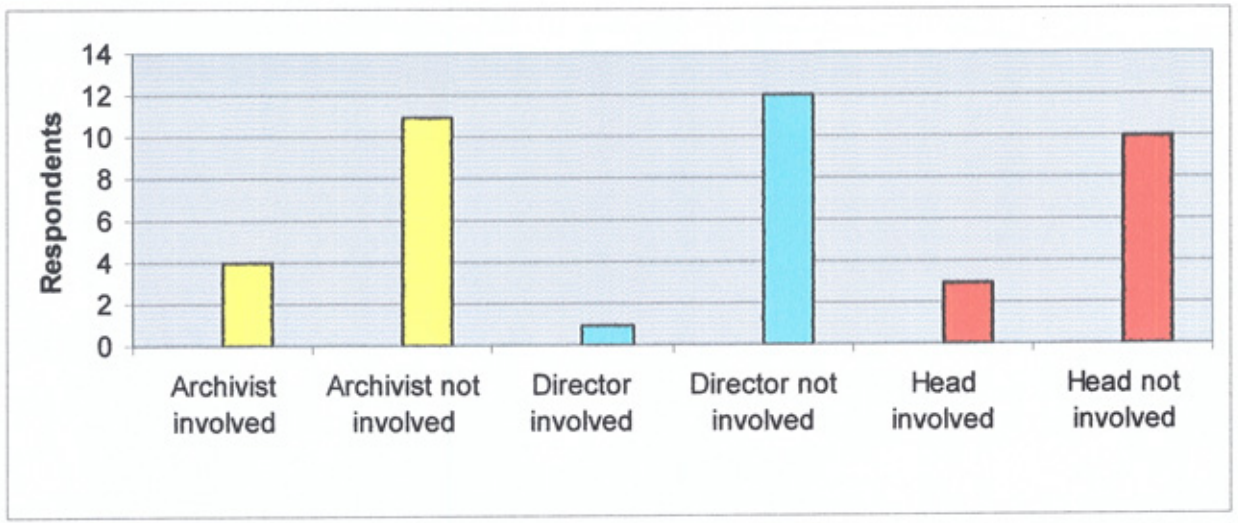


Figure 9.4. Respondents' nature of involvement in advising government on ERM

Job title	Involvement in advising	Visit	Issue guidelines	Appraisal	Migration	Preservation	Establish ERM programme	Meeting with agencies' IT personnel	Meeting with agencies' administrators	Meeting with agencies' records managers	Giving training	Other types of advise
Archivist	4	4	4	1	1	1	4	4	4	4	1	0
Director	1	1	1	1	0	0	0	1	1	1	1	0
Head	3	1	2	1	2	2	2	2	2	2	1	0
Total	8	6	7	3	3	3	6	7	7	7	2	0

Unit which was responsible for looking after the electronic records had only two archivists in charge.

However, they had several staff to assist them: two line managers, six technical assistants and four clerical staff. In Finland there were four archivists and in Sweden five archivists in charge of electronic records at their respective National Archives. The literature suggests that the National Archives of Germany had the highest number of archivists, namely 16 archivists responsible for electronic records. This might have increased by now, as this figure was derived from an earlier finding, namely Schurer's survey (1999). However it could not be ascertained whether these archivists were actually responsible for advising their governments on ERM.

Data in Figure 9.4 mentioned activities relating to the drawing up of guidelines, as well as meetings with the various agencies, particularly IT personnel, administrators and records managers. In contrast, no importance was attached to the provision of skills training. The advisory service did not include certain important issues such as appraisal, migration and preservation. It is not unreasonable to assume that the lack of coverage indicated a lack of knowledge and skills on the part of the archivists in vital areas of ERM.

The Director of the ERM & IT Division, repeated in all three interviews with him that the archivists' reputation was dependent on their level of knowledge and skills in ERM. This was the reason why he and his archivists were keeping a low profile: they wanted to be knowledgeable and skillful enough to be able to confidently provide advisory services to creating departments on the technical aspects on ERM [NAA2I02-8/1(291)]. The Head of the Standards and Inspectorate Unit confirmed the views of her superior: "currently the Archives does not have enough skilled and experienced archivists to do archival processing tasks like appraisal and preservation of electronic records and to advise the creating agencies". [NAA5I02-13/12(693)].

Since the archivists were not able to give technical advice in the main areas of archival management of electronic records, questions were asked on the extent to which the archivists were involved in these areas of work. The Director of the ERM & IT Division explains, "There is an Advisory Unit in this Division which gives briefings on general awareness topics of ERM" [NAA2I02-8/1(456)]. To confirm the view of the Director of the ERM & IT Division on the extent of the roles of the archivists in conducting awareness briefings for government departments, the Head of the Standards and Inspectorate Unit said she was required to deliver general briefings on ERM during training sessions conducted by the Training Division of the National Archives [NAA5I02-13/12(362)]. She added that the Archives was in dire need of the right people with the right knowledge and skills in her Division to discharge their professional responsibilities in the area of ERM [NAA5I03- 18/12(755)].

2.1.5 *Involvement in EG projects*

Figure 9.5 showed that out of 41 only eight respondents (comprising four *Archivists,* one *Director* and three *Head*) were involved. The majority of the respondents constituting 88% were not involved. It was not surprising that all eight respondents were from the ERM & IT Division. The impression from the responses was that work carried out by the ERM & IT Division was still at the infancy stage of developing standards and procedures through a research project on the management and preservation of electronic records in the public sector. As shown in Figure 9.6, four *Archivists* reported that they were responsible for developing standards for ERM; planning for ERM in the public sector; preparing the archives for accepting electronic archives; and to conduct research into ERM. On his part, the *Director* described his job as preparing strategic plan and policy on all aspects of ERM.

From the data analysis, it was clear that only a small number of archivists were involved in the EG projects. This scenario did not auger well for the future of our archival heritage. Activities relating to conventional records were distributed among the majority of the respondents. This was not surprising because the approach to managing conventional records was more tactical and operational in terms of human resource in

Figure 9.5. Respondents' involvement in advising government on ERM and EG projects.

Job title	Division	Advice to government	Nature of advisory services	EG projects	Area of advice/ assistance
Archivist	Training	No		No	
Archivist	Training	No		No	
Archivist	Access	No		No	
Archivist	Guide	No		No	
Archivist	ER & IT	Yes	Visits; issuance of guidelines on appraisal, migration and preservation; established ERM programme; meeting with agencies' IT personnel; meeting with agencies' administrators; meeting with agencies records managers.	Yes	On preservation of e-records of archival value
Archivist	Repository	No		No	
Archivist	ER & IT	Yes	Visits; issuance of guidelines; established ERM programme; meeting with agencies' IT personnel; meeting with agencies' administrators; and meeting with agencies records managers.	Yes	Preservation of e-records.
Archivist	ER & IT	Yes	Visits; issuance of guidelines; established ERM programme; meeting with agencies' IT personnel; meeting with agencies' administrators; and meeting with agencies records managers.		
Archivist	ER & IT	Yes	Visits; issuance of guidelines; established ERM programme; meeting with agencies' IT personnel; meeting with agencies' administrators; and meeting with agencies records managers.	Yes	Research to develop standards and procedures on ERM

Job title	Division	Advice to government	Nature of advisory services	EG projects	Area of advice/ assistance
Archivist	Conventional Record	No		No	
Archivist	Conventional Record	No		No	
Archivist	Conventional Record	No		No	
Archivist	Acquisition	No		No	
Archivist	Prime Gallery	No		No	
Archivist	Prime Gallery	No		No	
Director	Kedah State	No		No	
Director	Johore State	No		No	
Director	Procurement	No		No	
Director	Perak State	No		No	
Director	Sabah State	No		No	
Director	Conservation	No		No	
Director	Penang State	No		No	
Director	ER & IT	Yes	Visits; issueance of guidelines; appraisal; meeting with agencies' IT personnel; meeting with agencies' administrators; meeting with agencies' records managers; and giving training.	Yes	Research project to develop standards and practices on ERM
Director	Memorial	No		No	
Director	Sarawak State	No		No	
Director	Heroes' Gallery	No		No	
Director	Prime Gallery	No		No	
Director	Memorial	No		No	
Head	Human Resource	No		No	
Head	ER & IT	Yes	Visits; issuance of guidelines; appraisal; migration; preservation; establish ERM programme; meeting with agencies' administrators; and meeting with		Research to develop standards and procedures.

Job title	Division	Advice to government	Nature of advisory services	EG projects	Area of advice/ assistance
			agencies' records managers.		
Head	ER & IT	Yes	Issuance of guidelines; migration; preservation; establish ERM programme; meeting with agencies' IT personnel; meeting with agencies' administrators; and meeting with agencies' records managers.		
Head	ER & IT	Yes	Providing training	No	
Head	Repository	No		No	
Head	Conventional Record	No		No	
Head	Conventional Record	No		No	
Head	Administrative	No		No	
Head	Acquisition	No		No	
Head	Guide	No		No	
Head	Access	No		No	
Head	AV Centre	No		No	
Head	Exhibition	No		No	

which activities were centralized at the National Archives. By comparison, ERM was dependent on strategy in terms of system designs, as well as activities which needed to be distributed among the Ministries. This called for a different human resource structure. This needed to be recognized by the National Archives and the Federal Ministries.

The implication of the findings of the survey based on data from interview with the Chief Assistant Director of EG Development Division, the Deputy Director of IT, Head of System Division, and the Head of Registry at the Prime Minister's Department, was that the archivists who had involved with the preservation of conventional records at the end of the records life cycle, were not involved in the system design of the EG [PMA1I01 -18/7(59)], [PMIT1I02-10/7(15)], [PMIT2I01-11/7(35), [PMR1I02-12/7980)].

Figure 9.6. Year of service, place of attachment and summary of position description of respondent

Job title	Division	Year of Service	Place of Attachment	Position Description
Archivist	Training	12	Headquarters	Assisting in organizing talks, briefings and lectures on conventional records management for staff in the public sector.
Archivist	Training	17	Headquarters	Organising workshops and talks on records management and archives.
Archivist	Access	17	Headquarters	Research
Archivist	Guide	2	Headquarters	Providing guidance to researchers (provide findings aids) and input data into computerized finding aids.
Archivist	ERM & IT	13	Headquarters	To assist in developing standards for ERM
Archivist	Repository	6	Headquarters	Assisting in the management of the repository
Archivist	ERM & IT	18	Headquarters	To assist in the planning for the management of electronic records in the public sector
Archivist	ERM & IT	1	Headquarters	Assisting in preparing for the archives to get ready with electronic archiving
Archivist	ERM & IT	17	Headquarters	To do research on ERM
Archivist	Conventional Records	18	Headquarters	Records management – appraisal/review/consultancy/records management procedures/briefings/inspections
Archivist	Conventional Records	17	Headquarters	Appraisal of records, advice government departments and implementation of records management projects
Archivist	Conventional Records	9	Headquarters	Visit and advise on records management to government agencies, appraisal and transfer of records
Archivist	Acquisition	15	Headquarters	To acquire and process, arrange and describe records from the government departments
Archivist	Prime Gallery	2	Headquarters	Research/outreach programmes, interview people to get information to set up prime ministers' gallery.
Archivist	Tunku's Memorial	18	Headquarters	Assisting in managing archives, records, artifacts and library materials related to the first prime minister
Director	Kedah State	20	Branch Office	Managing federal government records and archives and to advise federal agencies in the state of Kedah on records management
Director	Johore State	25	Branch Office	Managing the branch office, doing appraisal, review and records transfer from the federal department in the state of Johore.
Director	Procurement	29	Headquarters	Management of the procurement of archival materials and the management of AV center
Director	Perak State	21	Branch Office	Taking care of Perak's Branch Archives, administration, finance and provide access to archives

Job title	Division	Year of Service	Place of Attachment	Position Description
Director	Sabah State	17	Branch Office	Implementing archival policy of the federal government for federal agencies in the State of Sabah
Director	Conservation	24	Headquarters	Managing the conservation and reprographic division of the National Archives
Director	Penang State	10	Branch Office	Managing the Penang branch of the National Archives including giving advise on records management
Director	ERM & IT	28	Headquarters	Preparing strategic plan and policy on ERM for archiving and formulate policy and standard procedures for ERM
Director	Memorial	20	Headquarters	Managing the acquisition of records and artifacts and library materials for the prime ministers' gallery
Director	Sarawak State	13	Branch Office	Managing federal archives in the State of Sarawak and providing access to archival materials
Director	Heroes' Gallery	20	Headquarters	Managing the gallery and in charge of documenting the biographies of notable people and statement
Director	Prime Gallery	25	Headquarters	Managing and administering the gallery of the former prime ministers and the public services gallery
Director	Memorial	25	Headquarters	Managing the overall administration of the gallery of the first prime minister
Head	Human Resource	19	Headquarters	To plan and implement the development of human resource management for the department
Head	ERM & IT	24	Headquarters	Planning and managing electronic records in public sector for permanent preservation
Head	ERM & IT	21	Headquarters	Evaluating international best practice in order to develop national standards, procedures on ERM
Head	ERM & IT	20	Headquarters	Organise awareness programmes such as briefings on ERM for the public sector
Head	Repository	21	Headquarters	Managing records centre and archival repository
Head	Conventional Records	20	Headquarters	Supervisory, to do records inventory, schedules, transfer, arrange and describe public records
Head	Conventional Records	20	Headquarters	Managing appraisal, disposal and transfer of paper records from the government departments
Head	Administrative	20	Headquarters	Managing administrative and finance division, building maintenance and other administrative functions
Head	Acquisition	25	Headquarters	Supervising, organizing process of acquisition, and the transfer of archival materials from the creating agencies
Head	Guide	18	Headquarters	In charge of description and preparation of finding aids/guides to public and private archives
Head	Access	22	Headquarters	Managing the research room and providing services to the researchers
Head	AV Centre	21	Headquarters	Planning for the establishment of AV centre and managing the centre
Head	Exhibition	21	Headquarters	Supervising and organizing exhibition for the National Archives

The interview data from the Prime Minister's Department matched the qualitative data from the National Archives. In this case, the Head of the Standards Development and Inspectorate Unit (ERM & IT Division of the National Archives) viewed the archivists' roles and responsibilities as pertaining to the beginning of every system design and development. Throughout the three interviews with her on four occasions she mentioned that the archivists at the Archives did not participate in the systems design and development of the legacy systems and the EG systems. During the first interview in particular, she expressed regrets by saying, "it is sad to say that during the design and development of the EG systems, and even before that when the legacy systems were developed, we were not involved" [NAA5I01-9/12(83)]. On the other hand, the Director of ERM & IT Division believed that it was inappropriate for the archivists to get involved at the design and development stage of the legacy and the EG systems because, "... we don't have the policy, standards and procedures for electronic recordkeeping. On top of that the archivists here lack the required knowledge and skills in ERM. What are we going to tell them?" [NAA2I02-8/1(128)]. This was further confirmed by the Director General when she said, "we cannot get involved in the system design and development as yet, not until 2008 when the Archives is ready with policies, standards and procedures on electronic archives" [NAA1I02-16/1(376)].

2.1.6 *Electronic records work practices involving the archivists*

A list containing 12 electronic work practices was included in the questionnaire to identify further whether the archivists in the National Archives were involved at all in ERM. The aim was to ascertain the extent of the respondents' knowledge and skills on the subject under study in order to justify the needs for education and training.

Out of 12 respondents who recognized themselves as being responsible for looking after the electronic records (see Figure 9.2 on page 230) only five responded to this question. They comprised one *Archivist*, three *Directors* and one *Head*. The data in Figure 9.7 indicated that the *Archivist* was only involved in identification and auditing of electronic records. On the other hand, the *Head* was also involved in similar activities such as identification, creation, appraisal, retention, disposal, link with ERM & IT Division and

other work practices (in charge of SISPEN). However, a detailed analysis of the data showed that not all the respondents were involved in the technical work practices relating to naming convention, metadata, conversion and transfer of electronic records to the Archives. In connection with the transfer of electronic records to the National Archives, it was surprising to note from the majority of the respondents, 35 out of 41 (as shown in Figure 9.8 on page 245), that non-current records in electronic formats were yet to be transferred to the Archives.

Figure 9.7. Electronic records practices involving the respondents in the National Archives of Malaysia.

E-records Practices	Archivist	Director	Head	Total
Identification	1	2	1	4
Creation	0	0	1	1
Appraisal	0	0	1	1
Retention	0	2	1	3
Disposal	0	0	1	1
Naming convention	0	0	0	0
Metadata	0	0	0	0
Preservation	0	2	0	2
Transfer	0	0	0	0
Conversion	0	0	0	0
Prepare ERM programme	0	3	0	3
Establish link with ER & IT Division	0	1	1	2
Other	Auditing	0	SISPEN	2

The survey data was supported by the interview data when the Director of ERM & IT Division emphasized that, "we do not want the departments to transfer their electronic records because we do not have the policies, standards and the facilities in place to preserve these records" [NAA2I02-8/1(153)]. In the second interview with him, the Director of ERM & IT Division stressed that the archivists were not prepared to assume their roles and responsibilities. In his words, "the archivists assigned the responsibility to preserve electronic archives are not ready with the required knowledge, so we cannot accept any electronic records now until we are ready with the expertise and the facilities" [NAA2I02-8/1(265)]. When the Head of the Standard and Inspectorate Unit was asked

about this matter, she confirmed the view of her superior that electronic records were not transferred as yet to the National Archives because of the absence of policies, standards and procedures, and also the lack of knowledge and skills among the archivists [NAA5I02-13/12(330)].

Figure 9.8. Current practice on the transfer of non-current electronic records into the National Archives

Job title	Non-current e-records transferred into the National Archives	Non-current e-records not transferred into the National Archives	Total
Archivist	3	12	15
Director	1	12	13
Head	2	11	13
Total	6	35	41

From the findings of the survey and in-depth interviews, it was clear that the roles and responsibilities of the respondents were predominantly focused on conventional records management. Even though the respondents attached to the ERM & IT Division recognized the need for electronic recordkeeping at the Archives, those who were assigned this role did not consider themselves responsible for looking after the National Archives own electronic records and those of the Federal Government in their custody. This was because electronic records of the National Archives or other Federal Government departments were yet to be transferred to the custody of the National Archives, as revealed by the qualitative data.

3. The situation in which the different record keepers managed electronic records

In this area of investigation, it was evident that the National Archives was not managed in accordance with records management standard practices. The data collected related to various areas of ERM such as creation, use and maintenance; records storage; policy on ERM; and advisory services on ERM.

3.1 *Electronic records management in the National Archives*

Several questions were asked to assess the way electronic records were currently being managed by the archivists in the National Archives in accordance with records management standard practices. These questions covered areas, such as record contents, as well as maintenance, retention and preservation of the Archives' own electronic records and also the Federal Governments' electronic records in the custody of the Archives.

3.1.1 *Creation, use and maintenance of electronic records in the National Archives of Malaysia*

This part of the survey sought to find out whether the archivists at the National Archives were practically involved in looking after their own electronic records which they had created, maintained and used in the course of daily administration. In regard to the contents of electronic records under its custody, a list of 15 categories of informational content were listed (see Figure 9.9 on page 247).

For the *Archivists*, minutes and supporting papers registered the highest frequency (13), followed by personnel records (10) and correspondences (eight). The response to the other record types such as lists and inventories, agreements, project papers and financial records registered the next highest frequency (two). Policy papers, circulars and directives, as well as papers relating to legal and procurement matters registered the lowest responses (one each). None of the *Archivists* claimed to have in their custody blueprints/plans; property records; publications; and maps and plans in electronic format. The data implied that the *Archivists* used the computer for creating minutes, personnel records and correspondences more than any other types of records. This was reflected on the nature of their work which was largely transactional.

Similar to the *Archivists'* responses, the *Heads* also acknowledged that they had in their custody minutes in electronic format (registering the highest score); followed by correspondences and personnel records and finance; and then by policy papers, circulars, directives, lists and inventories (three scores). None of the *Heads* dealt with property

records, publications or maps and plans in electronic format. In contrast to the data on the *Archivists*, the data here indicated that responsibilities of the *Heads* were more tactical in nature since policy and finance records; as well as circulars and directives were commonly used and maintained by them (see Figure 9.9).

Figure 9.9. Categories of National Archives' own electronic records in custody

Types of electronic records	Archivist	Head	Director	Total
Policy	1	3	1	5
Blueprints & plans	0	0	0	0
Circular/Directives	1	3	0	4
Finance	2	4	1	7
Project management	2	2	1	5
Legal	1	1	0	2
Procurement	1	2	1	4
Agreement	2	1	0	3
Lists & Inventories	2	3	3	8
Personnel	10	5	2	17
Correspondence	8	6	0	14
Minutes & supporting papers	13	8	0	21
Property	0	0	0	0
Publications	0	0	0	0
Maps & Plans	0	0	0	0
Other types	0	0	0	0

In comparison to the responses of the *Archivists* and the *Heads,* the *Directors'* responses to this question registered the least score. The *Directors* gave the highest score to lists and inventories (three scores); followed by personnel records (two scores); and finally records on policy; finance; project management and procurement (one score each). Surprisingly, the *Directors* did not acknowledge at all that minutes and supporting papers and correspondences were generated and maintained electronically. However, collectively they agreed that personnel records were created and maintained in electronic formats. (for scores, please refer to Figure 9.9). This was nothing of a surprise, as the

Public Services Department had instructed that the personnel information of every government department to be created and maintained in SISPEN.

The respondents did not agree on the types of electronic records that were generated by the Archives kept in their own custody. Nevertheless the respondents acknowledged the existence of their own administrative records in electronic format which should be managed in accordance to standard procedures.

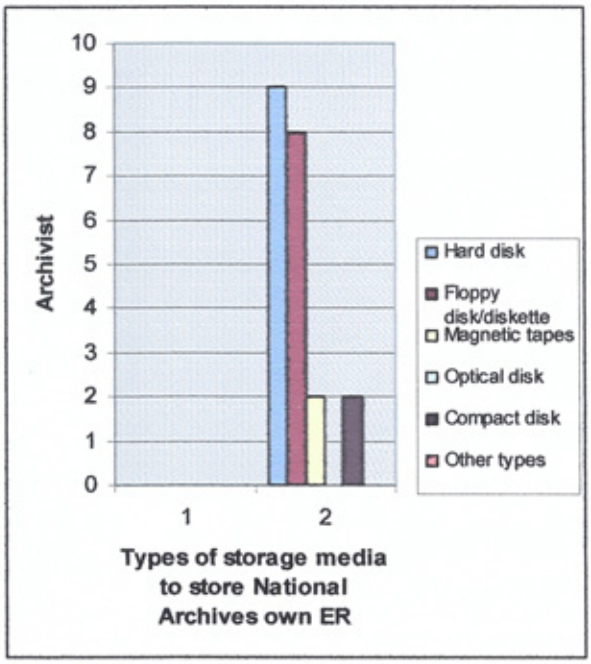
3.1.2 *Records storage (media and location)*

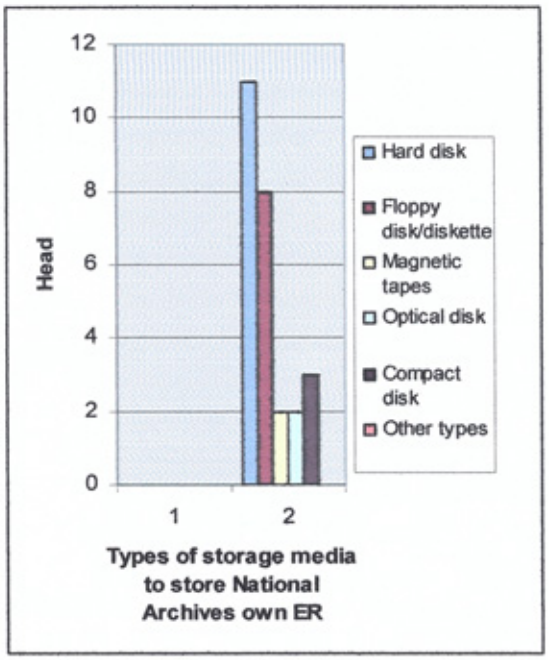
In seeking to identify how the Archives own electronic records were maintained, questions were asked pertaining to the storage media and locations where records were kept.

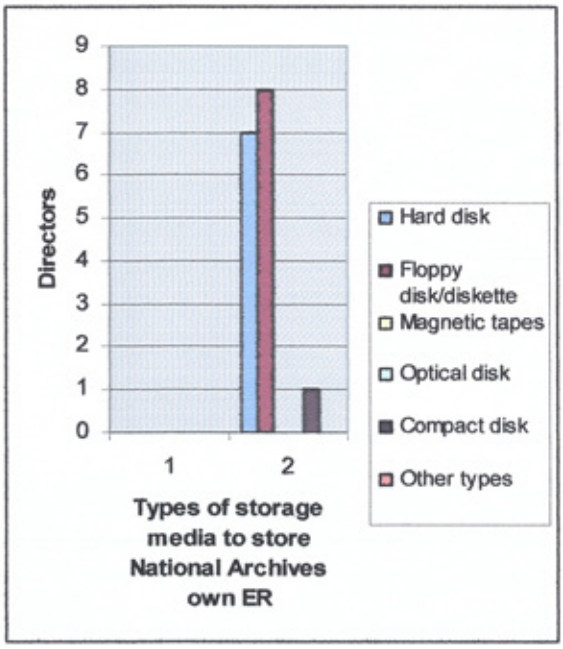
As shown in Figure 9.10 (on page 249), there were varied responses to the questions. The storage media commonly used by the National Archives to store their own electronic records were: hard disks (27), floppy disks/diskettes (24), compact disks (six), magnetic tapes (four) and optical disks (two). The response indicated that the National Archives mainly used hard disks and floppy disks to store information electronically.

In relation to the location where the electronic records were kept, data in Figure 9.11 (on page 250) showed that out of 27 respondents who acknowledged holding in their custody electronic records of their own, only three respondents believed that the records were kept at the ERM & IT Division; two believed that they were housed in the main Archives Repository in Jalan Duta Kulala Lumpur; one thought that they were kept in the Records Centre in Petaling Jaya. By comparison the majority of the respondents (23 of them) reported that the records were kept at the very division where they were created. Whereas 12 believed that the records were kept in each administrative unit of the National Archives.

Figure 9.10. Media used for storing electronic records (ER) generated by the National Archives of Malaysia.







Putting this data together with the findings in Figure 9.2 in page 230, it was evident that these records were being looked after by the creators and the staff concerned. The data in Figure 9.2 also suggest that the person in charge of these records had received no training in ERM. In this case education and training should be the prime concern and be made available to them.

Figure 9.11. The locations where electronic records generated by the National Archives of Malaysia were kept.

Job title	Reporting own e-records in custody	Records Centre, Petaling Jaya	Repository, Jalan Duta, Kuala Lumpur	ER & IT Division	Every Administrative Unit	Scattered locations	Division where created	Other places
Archivist	9	0	0	0	5	0	9	0
Head	11	1	2	3	5	0	7	0
Director	7	0	0	0	2	0	7	0
Total	27	1	2	3	12	0	23	0

3.1.3 *Federal electronic records in the custody of the National Archives*

The Data in Figure 9.12 revealed some interesting patterns. More than half of the respondents believed that the only electronic records of the Federal Government that were in the custody of the National Archives were in the form of mere electronic finding aids.[4] In addition, lower response on other types of records such as policy statements, circulars and directives, agencies publications, digital photographs and also the other types of records listed in Figure 9.12, indicated that the National Archives then, was not in a position to discharge its responsibilities to preserve the nation's electronic records.

Responses on storage media used for these records were shown in Figure 9.13. The most common storage media used by the National Archives, as reported by all three groups of respondents fell within the category of "other media". According to the responses, most of the *Directors* believed that servers were being used in contrast to other types of media such as magnetic tape, optical disk and compact disk. On the other hand, the *Archivists*

[4] COMPASS is the only electronic finding aids used in the National Archives. It is a finding aids for paper records. (http//www.arkib.gov.my)

Figure 9.12. Types of Federal Government (FG) electronic records of archival value in the National Archives.

Job title	Reporting FG e-records in custody	Policy	Finance	Agreement	Legal	Personnel	Circular/ Directives	Correspondence	Blueprints/ Plans	Property	Publication	Maps and plans	Audio visual	Digital photo-graph	Finding aids	other
Archivist	4	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
Director	7	0	0	0	0	0	1	0	0	0	0	0	1	1	7	1 (dataset)
Head	4	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0
Total	15	1	0	0	0	0	3	0	0	0	1	0	1	1	9	1

Figure 9.13. The storage media of FG electronic records of archival value in the National Archives (as reported by the respondents)

Job title	Number of respondents reporting FG e-records in custody	Magnetic tapes	Optical disk	Compact disk	Digital linear tape	Other media
Archivist	4	0	0	0	0	3 (server)
Director	7	2	1	1	0	6 (server)
Head	4	1	0	0	0	2 (server)
Total	15	3	1	1	0	11

did not admit that magnetic tapes, optical disks, compact disks and digital linear tapes were used by the National Archives to store electronic records of Federal Government in their custody. In contrast to these responses, one of the *Head* thought that magnetic tapes were used, while two of them believed that servers were used as storage media.

Figure 9.14 represented the storage locations used by the National Archives to keep electronic records under its custody. Nearly half of the respondents including six out of seven *Directors* believed that electronic records were kept at the Branch offices. The Branch offices were quoted most often as the finding aids were installed in all Branch offices for use by researchers. The rest of the locations mentioned by the respondents in the order of frequency included the Repositories (five), Records Centres (two) and other locations (two). Overall, the findings suggested that the National Archives stored electronic records of Federal Government of archival value in its custody at several locations. However it was not known what types of electronic records were kept at these different locations. This needed further investigation.

Figure 9.14. The storage locations of the electronic records of Federal Government of archival value in the National Archives of Malaysia.

Job title	Number of respondents reporting e-records of Federal Government in custody	Record Center Petaling Jaya	Repository Jalan Duta Kuala Lumpur	Branch Office	Other Locations
Archivist	4	0	3	0	1 (IT Unit)
Director	7	1	0	6	0
Head	4	1	2	1	1 (IT Unit)
Total	15	2	5	7	2

Upon investigating this matter, the Director of Procurement in charge of the records centre and the repository revealed that the electronic records perceived by the surveyed archivists were in actual fact nothing more than the electronic finding aids (COMPASS) to the paper records. As he mentioned, " COMPASS was installed in the records centre, repository, research areas here at the headquarters and every branch office. This is

maintained by the IT personnel" [NAA3I02-7/1(142)]. When asked if any electronic records of archival value were transferred to the archives for posterity, the Director of Procurement explained, "we have some magnetic tapes transferred into the Archives in the 1980s from the Prime Minister's Department but these were not for permanent preservation. They constitute copies of records generated under the vital records programmes: they represented the back up copies of records. In this case the Archives is considered an off site storage center for these records" [NAA3I01-5/1(120)]. The Director of the ERM & IT Division, in a second interview with him on the same issue, emphasized that the Archives was not ready to receive electronic records of value for posterity. He stressed his point by saying, "we are not prepared for electronic records to be transferred from the agencies because we don't have the knowledge and technical skills to preserve them. We are still at the planning stage of the project with IRMT to establish an electronic records centre" [NAA2I02-8/1(201)].

3.1.4 *General overseeing of electronic records management operations at the National Archives*

In the Federal Government agencies, working committees were often set up to oversee the implementation of certain activities or programmes in order to ensure their effectiveness. In relation to the management of electronic records, a question was asked on this matter in order to ascertain whether committees had been set up to exercise general oversight of electronic records management in the Archives (in view of the implementation of the EG).

Figure 9.15 indicated the types of Committees established to administer the activities of electronic records at the National Archives. Responses showed that several committees and personnel were in charge, namely:

- the National Archives Records Committee,
- the National Archives Electronic Records Committee,
- the National Archives Information Management Committee,

- the National Archives Electronic Records and Information Technology Committee,
- Archivists from the Electronic Records and Information Technology Division,
- Other officers from other Departments.

It was noticeable from the data that archivists from the ERM & IT Division played a significant role in overseeing the general management of electronic records. More than half of the respondents (23 out of 41) reported that archivists from the ERM & IT Division were responsible. At the same time a working Committee was established by that Division (National Archives ERM & IT Committee) to perform the same functions. It can be assumed that the members of this Committee were archivists from the same Division. Therefore the National Archives ERM & IT Committee was frequently mentioned: 16 respondents acknowledged the existence of such a Committee in that Division.

Although the data in Figure 9.15 (on page 255) confirmed the existence of the various Committees, the findings from the breakdown of the responses were surprising. None of the 13 *Directors* believed that the National Archives Electronic Records Committee (NA ER Committee) and the National Archives Information Management Committee (NA Info. Mgt. Committee) existed. As higher level officers who were in control of Divisions or Branch offices, the *Directors* should have known about the existence of all Committees concerning the activities of electronic records, or at least the *Director* of the ERM & IT Division should knew about it. But surprisingly the NA ER Committee had a strong membership comprising nine *Archivists* and *Heads*. This compared well to the NA Records Committee, and the NA Information Management Committee.

According to further analysis of the data, only one *Director* acknowledged the role played by the National Archives Records Committee in overseeing the management of electronic records. This was understandable, as this Committee was obviously concerned

Figure 9.15. The general overseeing of ERM in the National Archives

Job title	National Archives Committee	National Archives e-records Committee	National Archives Information Management Committee	National Archives ER & IT Committee	Archivist from ER & IT Division	Other Officer
Archivist	4	4	1	6	9	1 (PSD)
Director	1	0	0	5	7	1 (MAMPU)
Head	3	5	1	5	7	1 (Treasury)
Total	8	9	2	16	23	3

only for the management of conventional records. The *Archivists* (four) and the *Heads* (three) believed that this Committee was also making some contributions to the management of electronic records. In addition four respondents indicated that officers from the other Departments also discharged similar roles. It was reported that officers from the Public Services Department (PSD), Prime Minister's Department (MAMPU) and Treasury were involved. This was on account of the fact that the PSD was in control of the SISPEN; MAMPU was in charge of the EG pilot systems; and the Treasury responsible for auditing financial records.

3.1.5 *Policy on electronic records management*

To investigate further the management of electronic records, questions were asked on the availability of written policy which was formulated into guidelines by the National Archives of Malaysia.

The responses represented in Figure 9.16 showed that out of 41 respondents, only 17 (41%) acknowledged the availability of a written policy used as guidelines by the National Archives in the area of electronic records management. However the data strongly suggested that the key players such as the archivists, records managers and administrators were generally not involved in formulating and issuing policies and guidelines on electronic records. Surprisingly, the IT personnel made significant contributions. In this case, more than half the respondents (17 out of 24) believed that the written policy and guidelines were issued by the IT personnel from the ERM & IT Division. In addition, guidance on electronic records were also issued by policy making agencies such as the Public Services Department, Prime Minister's Department

(MAMPU) and the Auditor General's Office. The question that emerged from the findings was whether the contents of the policy were actually on ERM. In addition, the main concern here was whether the IT personnel in the National Archives and officers from the policy making departments were knowledgeable enough to formulate electronic records policy according to standard records management practices.

Figure 9.16. Written policy formulated into advice issued on ERM in the National Archives of Malaysia.

Job title	Organisation's Records Managers	Organisation's Archivist	Organisation's Administrator	Organisation's IT Personnel	Other Officer
Archivist	1	1	1	4	0
Director	0	1	0	9	0
Head	1	0	0	4	3(PSD,MAMPU,Treasury)
Total	2	2	1	17	3

To verify the above findings, the Head of the IT Unit (Information System Officer) at the ERM & IT Division of the National Archives in an interview with him explained, "what we have here are directives from MAMPU on guidelines in relation to EGIT. These include guidelines on recommended standards on devices and communication services to be followed by all government departments when developing new systems so that different platforms can be integrated in view of the EG" [NAITI01-15/1(25). When asked whether the guidelines contain any aspects on ERM, the Head of the IT Unit answered, "there are several elements on records being mentioned such as file services and file format but these guidelines are emphasizing IT instead of ERM. Whatever I received from the Prime Minister's Department will be distributed to all the Divisions in the Archives for their information and action" [NAIT1I01-15/1(47)]. To ascertain the knowledge of the Head of the IT Unit on ERM, questions were asked on his role and responsibilities. He explained that his major concern in the Unit was to maintain the information systems used in the Archives, such as COMPASS, and other systems used by all the government departments as provided by the Public Services Department and the Treasury (for financial records). He also claimed to maintain the generic office systems [NAIT1I01-15/1(65)]. When asked if he collaborated with the archivists over the preservation of electronic archives, the Head of the IT Unit said, "this Unit is in charge of

systems, creating systems on requests of the archivists and maintaining them following the guidelines from central agencies. So far, I am not involved in any preservation of electronic archives but we sat down together to develop general guidelines on ERM" [NAIT1I01-15/1(97)].

3.1.6 *Advise on electronic records management*

To provide links to the above findings, a question was asked on how the policy was made known to the respondents across the National Archives in order to support their roles and responsibilities in managing these records.

Fourteen of the 17 respondents acknowledged the existence of a written policy in the form of guidelines from the ER & IT Division. Data in Figure 9.17 indicated that other types of advice such as departmental directives and general circular letters were also issued. These include Treasury instructions on financial records. No guidelines were published in any form, be it leaflets/brochure or handbook. Surprisingly, the Ministry in charge of the National Archives (Ministry of Arts, Culture and Herritage) was generally not involved in issuing any guidelines for the archivists in the area of ERM as the Ministerial Directives got the least response of all. It indicated that the Ministry was not taking a leading role where electronic records was concerned, even though the Ministry was responsible for approving every policy pertaining to records and archives management developed by the National Archives.

Figure 9.17. The types of advice on ERM issued in the National Archives of Malaysia.

Job title	Respondents acknowledging the existence of written policy on ERM in the form of guidelines	General Circular Letters	Ministerial Directives	Departmental Directives	Directives from the Treasury	Guidelines from ER & IT Division	Published Handbook	Brochure or Leaflet	Other
Archivist	6	2	1	2	0	5	0	0	2(Notes/articles)
Director	6	4	0	6	3	5	0	0	
Head	5	4	0	4	2	4	0	0	
Total	17	10	1	12	5	14	0	0	

Overall, the data seemed to suggest that the ERM & IT Division had a significant role in developing guidelines on electronic records. This was explained by the Head of the IT Unit in the ERM & IT Division [NAIT101-15/1(25)], [NAIT101-15/1(47)], [NAIT101-15/1(65)], [NAIT101-15/1(97)].

3.1.7 *Guidance on ERM*

An attempt was made to ascertain the nature and content of guidance issued in support of the roles and responsibilities of the respondents from the National Archives.

Some patterns emerged from an analysis of the data in Figure 9.18. The response from the *Archivists* seemed to suggest that a link-up with the ERM & IT Division provided the best source of guidance (five responses). Guidance on creation, appraisal, retention, disposal and transfer was next in order of popularity (four responses each). The least popular subjects requiring guidance were electronic records programmes (three responses) and identification of electronic records (one response). In contrast to the *Archivists'* response, the *Directors* acknowledged that identification of electronic records and their preservation were the most widely needed subject calling for guidance (four responses each); followed by the subject on retention (two responses). Guidance on preparing electronic records programs and link-up with ERM & IT Division were least appealing (one response each). In comparison, the *Heads* believed that guidance on electronic records identification was most in demand (three responses), followed by guidance on the creation of electronic records (two) and retention of the record (two). The least popular response was for appraisal, disposal, transfer, formulation electronic records program and establishing link with ERM & IT Division (one each). The variation in responses was reflective of the differing levels of responsibilities; the *Archivists'* role is transactional; the *Directors'* is strategic; and the *Heads'* is tactical.

The overall response suggested that, guidance was needed in the following areas: identification of electronic records, retention, link with the ERM & IT Division, creation, appraisal, disposal, transfer and preparing electronic records programme. Further

9.18. Types of guidance on ERM issued in the National Archives of Malaysia.

Job title	Identification of e-records with continuing value	Creation of e-records	Appraisal of e-records	Retention of e-records	Disposal of e-records of no value	Metadata	Naming convention	Migration of e-records to new systems	Preservation of e-records	Transfer of e-records to records centre	Conversion of paper records to e-records	Programmes for ERM	Link with archivists at ER&IT Division	Other
Archivist	1	4	4	4	4	0	0	0	1	4	1	3	5	0
Director	4	0	0	2	0	0	0	0	4	0	0	1	1	0
Head	3	2	1	2	1	0	0	0	1	1	1	1	1	0
Total	8	6	5	4	5	0	0	0	6	5	2	5	7	0

breakdown of the responses revealed that the three groups of respondents did not consider it necessary to have guidance on metadata, naming convention, migration, preservation and conversion. Data in Figure 9.18 pointed to the non existence of such guidance. It was reasonable to assume that these aspects of electronic records involved technical knowledge and skills.

If the policy and guidance issued by the IT personnel from the ERM & IT Division did not include these technical aspects, the implication was that the contents of the guidance might comprised nothing other than the general aspects of ERM pertaining to identification, creation, appraisal, retention, disposal and transfer of records.

This issue was further investigated with the Head of the IT Unit and the Head of Standards and Inspectorate Unit as a follow up to the interview findings in items 3.1.5 and 3.1.6 above. The Head of the IT Unit, in his explanation when asked about the contents of guidelines issued on electronic records said that, "so far we have only issued general guidelines on how to create, maintain and appraise e-mail messages which were developed through input from the archivists in the Standards and Inspectorate Unit" [NAIT1I01-15/1(107)].

To verify this data, the same question was asked of the Head of Standards and Inspectorate Unit. She confirmed that general guidelines were issued on the management of e-mail to all archivists in all the divisions at the National Archives. When asked whether any other guidelines were issued, she confirmed that policy statement as well as guidelines on ERM and archival management of electronic records would be issued when the project with IRMT is completed, as it is the aim of the project to develop policies, standards, guidelines and procedures on ERM, as well as to set up an electronic records centre in the Archives [NAA5I01-9/12(83)]. This was contrary to the views of the Director-General who claimed that, "2008 is the target date for the Archives to be ready with the development of policies, standards and procedures on electronic records" [NAA1I02-16/1(376)]. Whatever it was, the interviews pointed to an absence of

comprehensive policies and guidelines on ERM and electronic archives management to support the archivists' professional roles and responsibilities.

This was confirmed by the Head of Electronic Records in the Economic and Social Sector of the ERM & IT Division who confirmed that guidelines on ERM was limited to e-mail management only, as the archivists lacked knowledge and skills on ERM. This situation contributes to the inability of the National Archives to formulate comprehensive policies, standards and procedural guidelines on ERM and electronic archives management [NAA4I01-9/1(10)], [NAA4I01-9/1(28)].

4. Inadequate education and training to support archivists' responsibilities in ERM

In order to assess whether the archivists at the National Archives who are responsible for electronic records are trained to do their work, a series of interrelated questions were asked. Firstly, they were asked if they received any education and training, secondly about the nature of education and training received, and thirdly on the sufficiency of the training received in support of their roles and responsibilities in managing electronic records in archival custody.

The responses to these questions revealed some interesting findings. Data in Figure 9.1 (page 228) and Figure 9.5 (page 238) showed that, out of 17 respondents who had received education and training in electronic records, 64% (11) of them had served the Archives for the past 20 to 28 years, and were holding the position of *Directors* (five) and *Heads* (seven). In comparison, the *Archivists* (five) who received education and training, had been serving the Archives for the past two to 17 years. All of them were stationed at the National Archives headquarters. Interestingly, in the *Director's* group of respondents, the majority of those who had received education and training (four of them) are the *Directors* attached to the Branch offices. The break down of the data from the *Heads* revealed some interesting patterns: it was not only the *Heads* from ERM & IT Division had had received education and training, but also *Heads* from the Human Resource and Administrative Divisions, Conventional Records Division, Acquisition Division and Access Division. This implies that respondents from Divisions other than

the ERM & IT had also been given the opportunity to receive education and training on electronic records.

On the types of education and training received by the respondents, data in Figure 9.19 showed that the most common medium of education and training were seminars, followed by conferences. In comparison, workshops were a less popular medium for education and training, and none of the archivists had attended any customized programmes and induction courses on electronic records. Four respondents reported having attended other forms of education and training, and surprisingly one respondent has received education and training in ERM at university level, while yet another had attended a briefing session by consultants.

Figure 9.19. Education and training on ERM received by the respondents in the National Archives of Malaysia.

Job title	Respondents who have received education and training on ERM	Workshop	Seminar	Conference	Accredited programme	Induction	Other	Sufficiency
Archivist	5	1	3	2	0	0	2 (visit/at University)	1
Director	5	4	5	4	0	0	1 (Study visit)	0
Head	7	1	4	2	0	0	1 (briefing by consultant)	1
Total	17	6	12	8	0	0	4	2

When asked if the training was sufficient, of the 17 respondents who had received education and training on ERM, only two acknowledged that the training was adequate. Given this data, it was evident from the majority of the archivists at the National Archives that the training they had received was insufficient to support their roles and responsibilities in the area of ERM. This was further supported by the data in Figure 9.2 (on page 230) pertaining to education and training of those other than the respondents, who were responsible for looking after the records. Over half of the respondents mentioned that the "creators" in charge of the electronic records had not received any form of education and training on this subject.

On this matter, the Director of the ERM & IT Division spoke forcefully about the necessity for the archivists (especially those who were attached to his Division) to be retrained in view of the EG. He gave his opinion on the necessity for all the archivists at the National Archives, regardless of where they were currently attached to obtain knowledge and skills through education and training. Being one of the most senior archivists with 29 years of experience working in the Archives, he was very much aware of the archivists' level of knowledge that was very much based on traditional records management [NAA2I03-13/1(490)].

As being reported by the Director of the ERM & IT Division, currently the archivists attached to the ERM& IT Division were sent to workshops, seminars, conferences, short courses and overseas visits to acquire knowledge and skills on electronic records [NAA2I03-13/1(527)].

The Head of Electronic Records (in the Social and Economic Sectors) who was attached to the ERM & IT Division was responsible for the establishment of work processes for ERM in the public sector and for the preservation of these records at the National Archives. According to her (who had 23 years experience working as an archivist at the Archives), she had attended several courses locally and abroad. Discussing her training at the Institute of Public Administration (INTAN) during the second interview with her, she explained, "I acquired some basic knowledge on IT from this course; but I did not get knowledge on electronic records from this course. It was just basic IT" [NAA4I02-14/1(128)].

From the course in INTAN, Head of Electronic Records (in the Social and Economic Sectors) felt that she did not get the knowledge in electronic records that she was supposed to acquire. To supplement her knowledge in this area, the Archives sent her for a study visit to Canada to take a look at a particular project at the UBC. She relates her experience, "I was exposed to the UBC project findings. They talked about integrity, reliability, and authenticity of electronic records. They were all theory consisting of basic knowledge to understand electronic records" [NAA4I02-14/1(123)].

Up to this point, it is evident from the data that the knowledge of the Head of Electronic Records (in the Social and Economic Sectors) was merely theoretical. To further enhance her knowledge, the department thought it was worthwhile to send her for another course abroad, so that she would acquire the relevant knowledge to support her role and responsibility in establishing work processes relating to the acquisition and preservation of electronic records.

This time she was sent to Royal Institute of Public Administration (RIPA) in London. According to her the training in RIPA focused more on general management. Areas like appraisal and metadata were not covered. There was also no practical training. [NAA4I01-9/1(107)].

After attending two formal courses at INTAN and RIPA and one study visit abroad specifically on electronic records, the Head of Electronic Records (Social and Economic Sectors) felt she still needed to know more about the subject when she said, " ...after all the knowledge that I have acquired, I did a lot of readings on my own on electronic records and also through the internet. I read about the National Archives project in UK and on several projects in Australia and then made a comparison of these projects, how they did the research projects and the output from the projects."[NAA4I02-14/1(135)].

As a result of the education and training that she had received, the Head of Electronic Records in the Social and Economic Sectors was able to execute one project to start with, before she could draw up practical guidelines on electronic records for the government departments. She had carried out a national survey on electronic records. She explained what she had done so far, "we have sent questionnaires to the Ministries and the various government departments under the Ministries. We have got the feedback. So with that we have information pertaining to electronic records in the public sector which will assist us to preserve these records in the future" [NAA4I01-9/1(44)].

Further data was needed to verify whether the education and training received by the Head of Electronic Records in Social and Economic Sectors was sufficient or not to

support her responsibilities as an archivist at the ERM & IT Division. In response to questions, she said, "based on what I got so far, it is not sufficient, definitely not sufficient because we need both IT and archives management knowledge to be able to perform well. So to me it is not sufficient, because IT is something that keeps on changing, so as time went on, maybe what I have learnt has become obsolete. So to me it is a learning process until the end. So it will never be enough. It is good to go for courses, attachments, and to read more to be informed and most of all to get involved" [NAA4I02-14/1(144)].

Despite the education and training received by the Head of Electronic Records in Social and Economic Sectors, she felt that they were not sufficient enough to support her responsibilities. However, she believed that life long learning is important in order to keep pace with the changing technology which have an impact on electronic records.

At her Division, the Head of Electronic Records in the Social and Economic Sectors had two IT personnel in charge of the systems. When asked whether the IT personnel had knowledge on electronic records, she said, "If they work here longer, through experience, through involvement in meetings, they will know about electronic records."[NAA4I02-14/1(193)]. She added that her IT personnel were not sent to any electronic records courses, as such courses were not available locally. The National Archives were deemed incapable of providing training on this subject; they continued providing training on conventional records management [NAA4I02-14/1(197)]. However, the Head of Electronic Records in the Social and Economic Sectors reported that the IT personnel had attended seminars and courses on IT and information management but nothing specifically on ERM or general records management [NAA4I02-14/1(202). This data was verified by the Head of the IT Unit during an interview with him when he mentioned, "there are only three of us here to maintain the systems, so far we have attended courses on IT and information systems, nothing on ERM as this is the archivists' concern" [NAIT1I01-15/1(107)].

The Head of Standards and Inspectorate Unit of the ERM & IT Division, when asked about the nature of the education and training received by the archivists who had responsibilities in this area, explained about the training and courses attended by her colleague, the Head of Electronic Records in Social and Economic Sectors. The Head of Standards and Inspectorate personally reported that she had attended conferences, seminars and visits on electronic records. She spoke of her experience in attending those conferences in Monte Carlo and Brussels. She said, "I personally have been going around getting some exposure overseas dealing with electronic records via conferences, seminars and visits. Seminar paper presented in Monte Carlo, for example, also dealing with info ethics organized by UNESCO, where we presented our case and obviously we are able to get some knowledge of what is happening in other parts of the world via conferences and I was also given a chance to attend another conference in Belgium, the DLM Forum, the European Community kind of things for information society and yes, was able to get to know what is happening in the European countries then" [NAA5I02-13/12(271)].

In addition to the international conferences, the Head of Standards and Inspectorate Unit was given the opportunity to visit archival institutions in Australia and Canada to observe best practice model on electronic record archiving. In the course of the discussion on this subject, she mentioned the standard that had been developed in Australia [NAA5I02-13/12(280)]. From her visit to Canada, she managed to develop COMPASS, the electronic finding aids to paper-based archives. This is an achievement for her since she was the one who was involved directly with the consultant in the systems design and development of COMPASS based on the Archivia and Archivista systems in the National Archives of Canada [NAA5I02-13/12(294)].

Other then the conferences and the visits, the Head of Standards and Inspectorate Division mentioned about the formal Masters course that she had attended at the University of London several years back. However this course was not specifically on ERM but on information management. According to her the course had provided her with exposure to office automation, and also enhanced her understanding of information

management [NAA5I02-13/12(303). When asked if the education and training that she had received so far allowed her to assume her existing professional work, she replied, "It is quite difficult to measure whether it is sufficient or insufficient, but definitely I feel I am inadequate, I don't have adequate knowledge to deal with electronic records because it is highly technical" [NAA5I02-13/12(346)].

Other than talking about the inadequacy of her knowledge and skills, she also reported on the training opportunity given to the other archivists in her Division. Two archivists were sent to Australia to have the hands-on experience with the VERS project. Another two were currently in Hong Kong to have a look at the progress made by the Hong Kong government on ERM. She also explained that these archivists were never sent for any specialized courses on electronic records other than for seminars and conferences organized by the National Archives [NAA5I02-13/12(297)].

The Director of the Procurement Division also discussed the nature of training so far received by the archivists in his Division. He shared his views with the Director of ER & IT Division, the Head of Electronic Records Unit (Social and Economic Sectors) and the Head of Standards and Inspectorate Unit on this issue when he also reported that his archivists were sent to seminars, conferences and short attachments in overseas Archival institutions. The Director of Procurement Division reported however, that his staff did not attend any specialized courses in electronic records as it was very costly to send archivists overseas. Instead, his staff was trained in the use of COMPASS, the electronic finding aids for conventional archival materials in the custody of the Archives [NAA2I03-10/1(273)]. When asked about the sufficiency of the archivists' knowledge and skills from the training that they have received so far, the Director of Procurement Division, like the others who were interviewed replied, "it is very hard to say 100% sufficient. But they need to do their job. As things become more sophisticated, there is a need for in-depth training . They may need more practical training which is very much lacking now" [NAA2I03-10/1(282)].

5. Solutions Suggested by the Archivists

The following solutions were recommended by the archivists in the questionnaire survey and interviews conducted.

5.1 *Education and training.* More than half the respondents (56%) expressed their dissatisfaction with the lack of opportunities and facilities for education and training, especially on the practical and technical aspects of electronic records. The respondents confirmed that they could gain knowledge and skills in ERM if they were given the opportunity for appropriate education and training. 24% believed that they were not ready to have the policies and standards on ERM as they lacked knowledge and experience in the area. The rest of the respondents, 13% of them suggested that the archivists should be given international exposure on ERM. 7% did not give any comment.

The majority of the archivists who participated in the study strongly expressed their need for education and training, which should be given priority by the management as a solution to the problem. Education and training in ERM should be extended to all archivists including those in the junior posts in view of the EG. Currently, the data suggests that only the archivists at the ERM and IT Division and Procurement Division were being targeted for education and training on ERM [NAA1I02-12/1(262)], [NAA2I01-4/1(70)], NAA2I03-10/1(257)], [NAA3I03-10/1(341)].

Archivists who were sent for training reported on the nature of the education and training they had received. Even though two of the archivists were sent abroad to attend a number of courses, they strongly believed that the education and training was not sufficient for them to carry out their professional job. The Head of the Standards and Inspectorate Unit had obtained a Masters degree in Information Management from the UCL. She had attended several international conferences on electronic records in Europe, and most importantly she was sent to Canada and Australia to study the various research projects in these countries. Yet she believed her knowledge and skills were not sufficient for her to do her job which required formulating standards on electronic records

for the Malaysian government. She insisted that education and training is the solution to the present incapacity of the archivists in the area of their professional responsibility [NAA5I02-13/12(271)], [NAA5I02-13/12(280)], NAA5I02-13/12(294)], [NAA5I02-13/12(303)],

The Head of Electronic Records (Social and Economic Sectors) has a Diploma in Information Management from INTAN and RIPA [NAA4I02-14/1(128)]. Then she was subsequently sent to UBC to study ERM project. In addition, she has also had a number of opportunities to attend seminars and conferences on electronic records. She believed that this was not sufficient to support her role of formulating processes for the electronic records to be acquired and preserved in the National Archives [NA4I01-9/1(107)], [NAA4I02-14/1(123), [NA4I02-14/1(135)]. The Head of Electronic Records Unit (Social and Economic Sector) and the Head of Standards and Inspectorate Unit reported that they did not have the requisite knowledge on how to manage electronic records. They believed this was the main problem that needed to be taken into consideration when sending archivists for training [NAA4I01-9/1(107), [NAA5I02-13/12(271)], [NAA5I02-13/12(280)]. Similarly with other archivists who were interviewed, both the Head of the Electronic Records (Social and Economic Sector) as well as the Head of Standards and Inspectorate acknowledged that courses in ERM were not available in Malaysia and therefore archivists needed to be sent abroad [NAA4I02-14/1(135)], [NAA5I02-13/12(297)].

The archivists who participated in the interview realized that they could not assume their roles and responsibilities without working together with the IT personnel, records managers and the government staff in the creating agencies. They suggested that the IT personnel, records managers and administrative staff involved in records management in one way or another should also be given knowledge and skills on ERM in order to assist the archivists in ensuring that only records worthy of preservation are transferred to the National Archives [NAA2I03-10/1(257), [NAA3I02-7/1(171)]. Two of the archivists put forward suggestion that IT personnel and administrative staff should possess knowledge on basic archival principles and theories as well as records management

policies and standard procedures [NAA3I03-10/1(341), [NAA3I03-10/1(350)], [NAA4I01-9/1(75)]. While the archivists interviewed believed that all archivists should have strong knowledge in IT so that they could understand the impact of IT on record keeping; the electronic recordkeeping design process and implementation; and have the ability to formulate policies, standards and guidelines on ERM so that they would be ready to preserve electronic records produced by the EG systems [NAA1I02-2/1(262), [NAA1I02-12/1(293), [NAA2I01-4/1(70)], [NAA2I03-10/1(257), [NAA3I02-7/1(171)], [NAA4I02-14/1(144)], [NAA5I02-13/12(303)].

5.2 *Policies and standard procedures for ERM.* All the archivists interviewed in this study believed that policies and standard procedures were the basic tools that enabled their intervention at the stage of design and development of the information systems. At least four archivists expressed the need for the National Archives to start formulating policies and standard procedures on electronic records, well before they could interfere in the electronic records creation stage. However all of them who were interviewed agreed that currently electronic records were not transferred to the National Archives due to the absence of policies and standard procedures. Without this, the archivists feared they would not be able to acquire electronic records of archival value for preservation as they believed that they did not have the requisite knowledge to formulate the right policies and standards on ERM [NAA1I02-16/1(376)], [NAA2I02-8/1(164)], [NAA2I01-4/1(106)], [NAA5I01-9/12(83)], [NAA2I02-8/1(128)], [NAA2I02-8/1(355)].

While waiting for the policies and standard procedures to be developed (by themselves), three of the archivists reported that currently their roles and responsibilities were limited to giving briefings and instilling awareness on the importance of archives to the government departments. Two senior archivists, the Director-General and the Director of the ER & IT Division recognized this issue and emphasized that archivists should not intervene at the record creation stage until the relevant policies and standard procedures were in place. This was to protect the archivists' reputation and integrity [NAA1I01-10/1(131)], [NAA2I03-13/1(607)]. The justification for non-involvement could also be based on the fact that the decisions have been made on the type of custody to be adopted:

whether it should be centralized custody, dispersed custody or mixed custody for the preservation of the public records in electronic format. The decisions called for comprehensive knowledge on ERM [NAA1I02-12/1(381)], [NAA2I02-8/1(265)], [NAA5I02-13/12(330)], [NAA3I01-5/1(107)].

6. Conclusion

When knowledge and skills of the surveyed archivists was placed in the context of the objectives of this study, it became evident that the insufficiency of education and training received by the archivists contributed to the archivists' limited knowledge and skills to support their roles and responsibilities to manage electronic records. The archivists' limited knowledge and skills on ERM prevented them from developing policies and standard procedures on ERM which was part of their main responsibilities. This provides justification for education and training of the archivists at the National Archives of Malaysia as a critical step towards preparing the National Archives for the challenges of preserving the nations' records produced by the legacy and the EG systems.

The data from the questionnaire and the in-depth interviews unveiled the actual work situation involving the archivists: how they manage electronic records, their current states of knowledge and skills in ERM, and their need for relevant and appropriate education and training to perform their professional jobs and to develop appropriate policies and standards on ERM.

There were strong similarities between data gathered from the record keepers in the Prime Minister's Department and data gathered from the archivists at the National Archives who were assigned the responsibility for the preservation of electronic archives. Both sets of data strongly indicates the lack of knowledge and skills in ERM of the different records keepers, and the absence of policies and standards on ERM within the Federal Government. These concerns may be addressed by having an appropriate curriculum for education and training in ERM for the record keepers as suggested by the record keepers in the Prime Minister's Department and the archivists in the National Archives of Malaysia.

The failure on the part of the administrators, archivists, records managers and IT personnel to perform their roles and responsibilities with regard to electronic records due to their lack of knowledge and skills has very serious implications, that the Malaysian Federal Government may have already lost records of its activities in electronic formats.

PART IV:

TESTING THE GENERIC MODEL IN THE CASE OF MALAYSIA

- Chapter Ten – Applicability of the Generic Model for Vocational and Professional Education and Training in ERM to the Situation in Malaysia

CHAPTER TEN

APPLICABILITY OF THE GENERIC MODEL FOR VOCATIONAL AND PROFESSIONAL EDUCATION AND TRAINING IN ERM TO THE SITUATION IN MALAYSIA

This chapter presents an evaluation of the generic model for vocational and professional education and training in the area of ERM in the specific context of the public sector in Malaysia. The evaluation was carried out with the help of various categories of Malaysian record keepers, through five focus groups discussions.

1. Introduction

The generic model for vocational and professional education and training in ERM developed on the fundamental concepts of education and training, which underpin the pragmatic examples of education and training programmes in Europe and UK, was evaluated by four categories of Malaysian record keepers through five focus group discussions. The four categories of record keepers were: Archivists; Records Managers; Administrators; and IT personnel. The archivists' focus group discussions were held on the 8th August 2004 at the National Archives of Malaysia. The records managers' focus group discussions were held on the 26th August 2004 at the National Archives of Malaysia. The administrators' focus group was held at the Ministry of Transport on the 1st September 2004, and the IT personnel focus group was held on the 6th September 2004 at the Prime Minister's Department. The final focus group discussion was held with representatives from each of these focus groups on the 27th September 2004 at the National Archives of Malaysia (see Appendix 10 for the agenda of the focus group discussions).

2. The Generic Model

The generic model for vocational and professional education and training in ERM comprises three distinct dimensions consisting of various elements (see Figure 7.15 on page 185). These three dimensions and their respective elements are as follows:

- Context/Driver:
    - establishing the need

- building partnership

- Target to be educated and trained:
  - different players
  - different levels
- Fulfilling the need:
  - programmes
  - curriculum
  - pedagogic approach
  - mode of delivery
  - achievement

This model was subjected to an evaluation whose findings are given below.

3. Findings of the Evaluation

3.1 *Diagrammatic presentation*

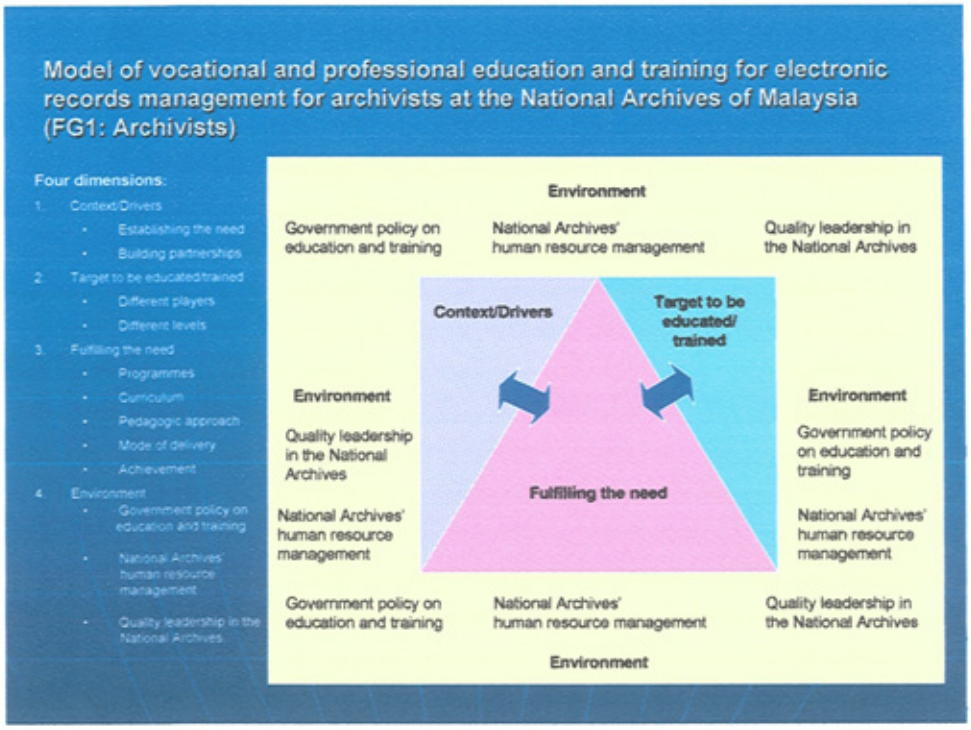
A diagrammatic view of the generic model for vocational and professional education and training for ERM which was developed in Chapter Seven and presented in Figure 7.15 on page 185 was shown to the focus group participants who were asked to comment on it. The different Malaysian record keepers reviewed the model differently as illustrated in Figures 10.1, 10.2, 10.3 and 10.4.

3.1.1 *Archivists' diagrammatic review of the model*

The archivists felt that environmental factors should be incorporated into the model as illustrated in the revised model in Figure 10.1. In the group discussions, the archivists felt that the environmental factors impacted on any education and training programmes that were to be designed and developed for the Malaysian archivists. The archivists cited a number of factors in the "environment " with two elements mentioned most often. These were the government policy and the National Archives' human resource procedures and practices. The focus groups were concerned that the education and training of archivists had to be dependent on government policy as dictated by the Public Services Department. On this matter, attention was placed more on the changing of the government policy pertaining to education and training of archivists. The participants

were concerned that the existing junior and some middle level archivists were not getting basic education and training as compared to their senior counterparts due to the changing policy of the government. The participants also emphasised that the procedures and practices of the Human Resource Division were not getting in the way of giving education and training to appropriate candidates. This had impacted on the archivists' access to knowledge and skills needed to manage electronic records.

Figure 10.1 Archivists' review of the model in Figure 7.15



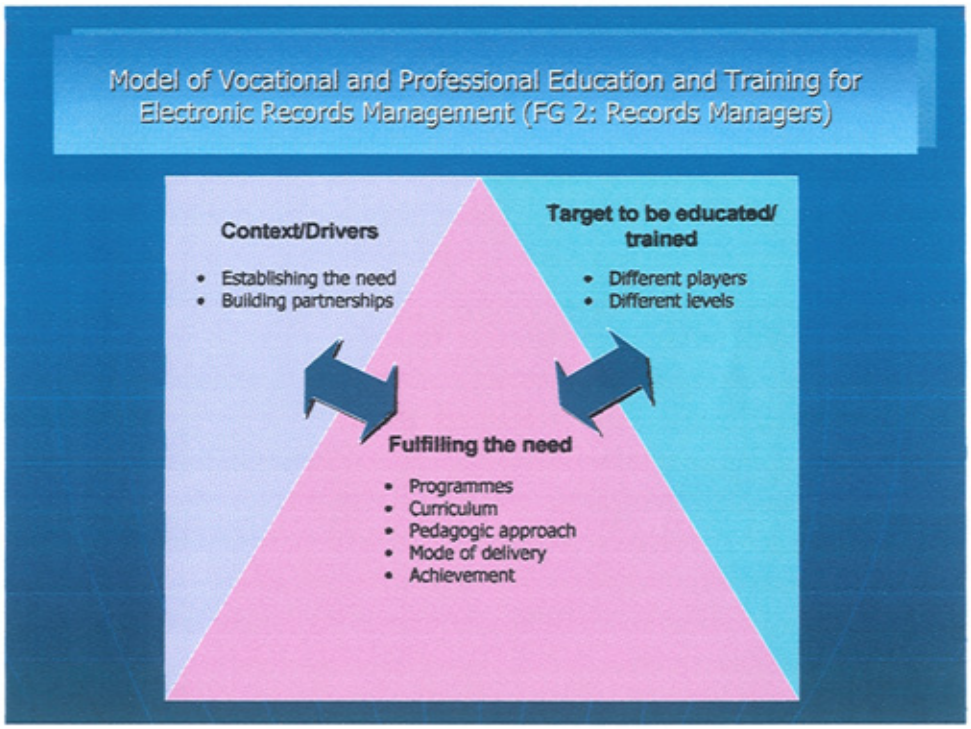
Participants discussed further features that should be incorporated into the education and training model. Foremost among these features was government policy on the education and training of archivists. Participants suggested that the National Archives should respond positively to the changing policy. For example, participants felt that new or junior archivists should be sent for basic education in records management and ERM at the local university, as there was budget constraint; to be followed later by sending them for overseas training in ERM.

A secondary but nevertheless a very important factor cited by the participants was the lack of planning on the part of the human resource division, a problem related to the leadership quality demonstrated by the Director General of the National Archives as the principle decision maker. This concern surfaced repeatedly in the archivists' focus group discussions. The participants believed that quality leadership was important for two reasons: firstly the necessity to respond positively to the government policy; and secondly to have proper human resource planning. The latter involves sending the right archivists for the right training and positioning the right archivists in the right places. This was necessary to maintain the professional interest of archivists, and to provide them with a positive attitude towards their professional responsibilities.

3.1.2 *Records managers' diagrammatic views of the model diagram*

The focus group participants felt that the model in Figure 7.15 was complete as it includes three important dimensions i.e the context/drivers; target to be educated and trained; and fulfilling the need for education and training. However, they argued that the education and training programmes to be designed and developed must be neatly related to the aims and objectives of the respective divisions that they were in charge of.

Figure 10.2. Records managers' diagrammatic review of the model in Figure 7.15

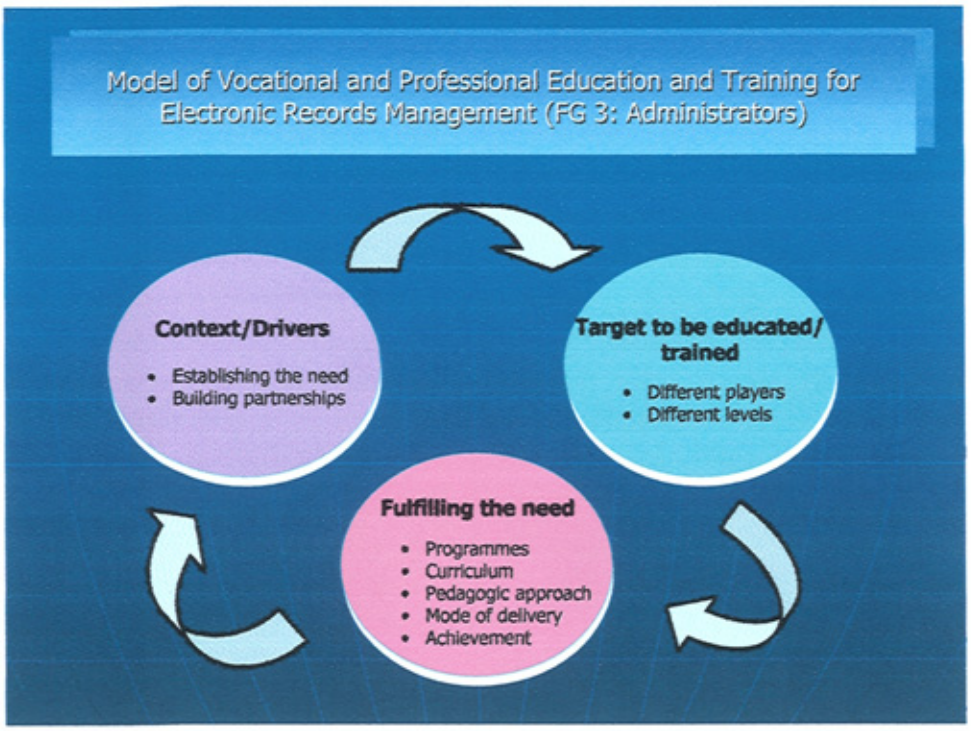


At the end of their discussions, the records managers suggested that the description of the three dimensions should be included in the main diagram to make it a complete model as illustrated in Figure 10.2.

3.1.3 *Administrators' views on the model*

The administrators favoured an interactive approach (see Figure 10.3) which is similar to the writer's original model diagram, but with a difference. The writer's model (Figure 7.15) suggests that there is no direct link between the "context/driver" and "target to be educated and trained" although these two dimensions are indirectly bridged by the dimension "fulfilling the need for education and training".

Figure 10.3. Administrators' diagrammatic review of the model in Figure 7.15



As in the writer's model, the administrators suggested that programmes must be responsive to the needs or the aims and objectives of education and training. The programmes would need to be evaluated as to whether they fulfilled the aims and objectives. The administrators argued that aims and objectives (context/drivers) might

change and this in turn would affect the target groups. When target groups changed, the curriculum would also change in accordance to the needs of the target groups.

The administrators were concerned about placing the EG on a firm and sound footing rooted in a sensible records management system for which cooperation from the relevant parties is important. Being at the upper echelons of the Malaysian government, they have an organismic view of the administrative pitfalls in the present system.

3.1.4 *IT personnel's views of the model in Figure 7.15*

In their focus group discussions, the IT personnel suggested that the process underpinning education and training should be presented horizontally from *context/drivers*, to the *target to be educated and trained* and finally leading to *fulfilling the need for education and training* as illustrated in Figure 10.4.

Figure 10.4 IT personnel's diagrammatic review of the model in Figure 7.15

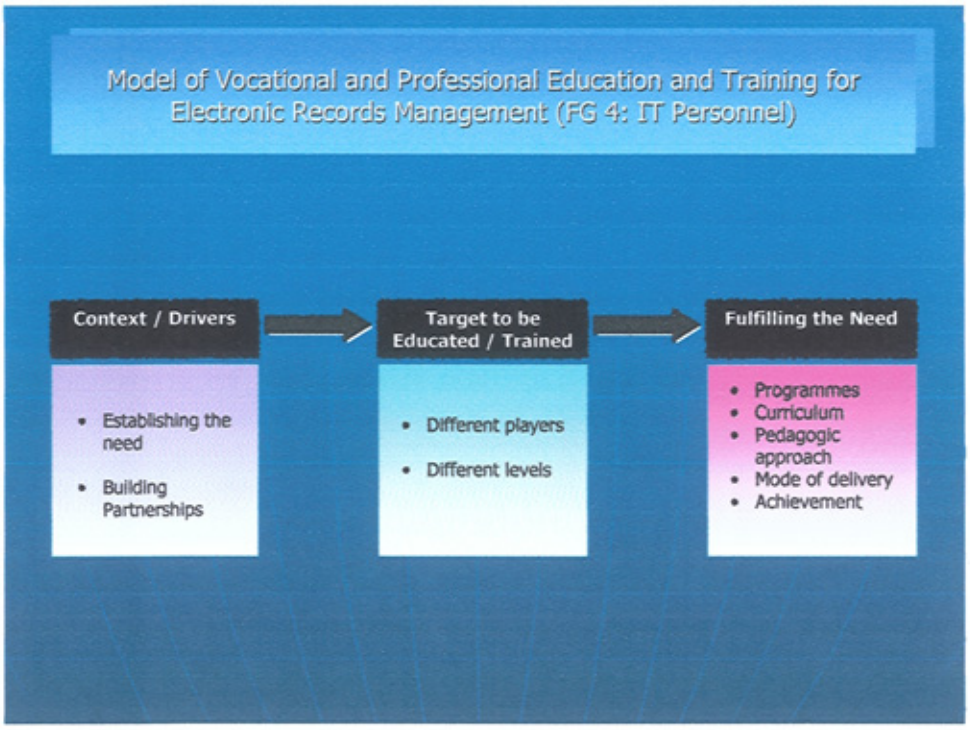


Figure 10.4 suggests a one way direction of the three elements which does not reflect linkages between context/driver with fulfilling the need for education and training. This

idea is rather simplistic, and does not take into account the dynamic interaction between the three dimensions as suggested in the other models.

3.1.5 *Consensus on the models*

In the final discussion, the focus group representatives agreed to retain their respective model diagrams as illustrated in Figure 10.1, 10.2, 10.3 and 10.4. This suggests that the views of the record keepers with regards to the model were not identical. The different diagrams present the way generic elements of education and training were understood by the record keepers. The model diagrams relate to the context in which the record keepers operated. However, collectively the focus group participants agreed the model should consist of the three dimensions which could help educators and trainers to identify the different needs of the key players in the Malaysian public sector.

3.2 **Context/Driver**

3.2.1 *Establishing the need*

According to the evaluation depicted in Figure 10.5, the administrators and IT personnel believed ERM did not constitute their core responsibility. Therefore, they did not feel compelled to attend any educational programmes in ERM. They suggested a general awareness training programme would serve them well enough.

In the final focus group discussions, the participants justified the need for education and training in their own terms. Only one justification matched the generic model elements, i.e professional development (the factor cited earlier by archivists). The records managers in contrast, did not regard professional development as a reason to acquire knowledge and skills, as they did not consider themselves to be professional records practitioners. They were assigned roles and responsibilities through administrative directives, and they could even be assigned some other responsibilities upon transfer to any other Ministries.

There was a certain amount of overlap and differences in their accounts of the purposes for education and/or training in ERM. The EG provided the common rationale for the

archivists, administrators and IT personnel to be trained in ERM, but its degree of importance differed. The archivists and IT personnel both cited EG as the main driver for their educational and training needs. In contrast, the administrators cited the EG as the least important justification for training, as they believed that their main task was to ensure the efficiency of administration for which they were accountable. Despite this, in the Malaysian context, it is generally evident that the EG constituted an important "context/driver" for the different record keepers to learn about ERM, whereas the generic model was a response to a wider electronic environment as evident in the pragmatic examples programmes. The data also suggests that the IT personnel regarded ERM to be an inevitable extension of their existing job. This matched the generic model elements.

Figure 10.5. Data deduced from the generic model set against views of the focus groups on the need for education and training.

Programmes	**Generic Model Elements**	**Archivists' Views**	**Records Managers' Views**	**Administrators' Views**	**IT Personnel Views**
Education	Education seen as vital for : ▪ Personal development ▪ Professional development ▪ Success of business and industry.	Education perceived as vital for: ▪ EG ▪ Professional development ▪ discharge of professional responsibility	Education necessary on account of: ▪ Assigned responsibility based on General Circular Letter No. 1/1997	*Believed that present administrators do not need education in ERM*	*Believed that present IT personnel do not need education in ERM*
Training	Training seen as vital for: ▪ Human resource development ▪ Professional development ▪ Organisational efficiency ▪ Building partnership ▪ New roles and responsibilities ▪ Electronic environment ▪ Administrative demands for integrity, reliability and authentication of records.	Training needed for: ▪ Success of EG ▪ Professional development ▪ Discharging professional responsibility.	Training needed to fulfill: ▪ Assigned responsibility based on General Circular Letter No. 1/1997.	Believed in training for: ▪ Administrative efficiency and accountability ▪ Success of EG	Training seen as important for : ▪ Success of EG ▪ Acceptance of new roles and responsibilities

3.2.2 *Building partnerships*

In the generic model, the element of building partnerships was explicit especially in e-TERM whose main objective was to provide the different target groups with the opportunity to gain knowledge of ERM through a common education and training programme. This was explicit not only in the stated objectives of the programme, but also in the orientation of the curriculum towards building partnerships. This was in line with the suggestion in the literature that the different record keepers needed to learn together so that they could understand their roles and responsibilities in regard to ERM.

However, the Malaysian record keepers perceived building partnerships from a different perspective. It is evident from the Malaysian focus group discussions that merely building partnerships among the record keepers for common education and training was not enough. Instead, they emphasized establishing partnerships among the stakeholders at a more strategic level. For the archivists on the other hand, it was important to forge partnerships with the various Ministries and Departments. This was natural, for the records managers' partnership with the National Archives was central to their work. The administrators and IT personnel also recommended partnership with the highest authorities as this was of paramount importance, unlike the case of the generic model. This data was verified in the final focus group discussion when the participants further explored this issue. Instead of focusing on how to develop partnership among themselves, (the different record keepers) their discussion centred on ways to develop partnership with the policy makers at the strategic level as they believed that this was lacking and urgently needed. There is a need for effective strategy and policy for the implementation of ERM in the Federal Ministries. This necessitates high level support from the top/senior management which the focus group participants believed was lacking.

In the Malaysian government bureaucracy, decisions are made by the top management. Thus education and training in ERM would be possible only if the top management decided to formulate a clear policy to be implemented down the line. This is natural, for in the Malaysian case, unlike that of the European context, ERM is still in its formative stage, and requires high level support. Only after the support is assured and forthcoming

will it be possible to speak of partnership as in the European context. Partnership is as crucial at the formative stage, as it will be at the later stage. But the various record keepers in the Malaysian context are not yet in a position to realise this.

Figure 10.6. Data from the generic model and focus group discussions on partnership building.

Programmes	**Generic Model Elements**	**Archivists' Views**	**Records Managers' Views**	**Administrators' Views**	**IT Personnel Views**
Education	▪ Target groups to learn together in one common educational programme on ERM ▪ Subject orientations towards building partnership: -record keeping concepts for non-record professionals -concepts and trends in ICT for non-ICT professionals -concepts and trends in business operations.	▪ Partnership with policy making Ministries and Departments for provision of education ▪ Partnership contingent on archivists' thorough understanding of ERM	▪ Partnership with top management in every Ministry for provision of education ▪ Partnership with National Archives (the policies with regard to education must be clearly stated) ▪ Partnership based on records managers' thorough understanding of ERM	Not applicable	Not applicable
Training	▪ Target groups to learn together in one common ERM training programme ▪ Subject orientation towards building partnership in order to understand different target groups' roles and responsibilities.	▪ Partnership with policy making Ministries and departments for provision of training ▪ Partnership based on archivists' competence in ERM and electronic archives management.	▪ Partnership with top management in every Ministry for provision of training ▪ Partnership based on records managers' competence in ERM ▪ Partnership with National Archives on training.	▪ Partnership with key players to be established through policy, directives and procedures from the top management ▪ Partnership with the Chief Secretary to Government.	▪ Partnership to be based on Electronic Government Information Technology Policy and Standards (EGIT).

3.3 **Target to be educated and trained**

3.3.1 *Different types of record keepers*

As illustrated in Figure 10.7, in the generic model, the target groups were limited in the sense that education and training were meant only for archivists, records managers, administrators and IT personnel at the tactical, managerial, supervisory and operational levels. In the Malaysian case, even though education was limited to the records practitioners, training included almost everyone across the Malaysian government. This is because everyone needs to know, understand and/or be skillful in ERM in order to make a success of the EG. This was not the case in the pragmatic examples as EG did not provide a strong case for knowledge and skills to be imbibed across the board, even though the context of the electronic environment provided a good driver. Thus the context differs between the generic model and the Malaysian case.

The data reveals that the different record keepers focused their attention on target groups in their respective schemes of service. Among the record keepers, only the archivists confirmed that archival staff should be educated and trained to a measure commensurate with their respective length of service to ensure fair opportunity for education and training, so that this would enable them to be placed within, or transferred to any division in the Archives to be in charge of electronic records, a scenario that is likely in view of the EG. At present, only those attached to the ERM & IT Division were sent for education and training in ERM. By comparison, the functional groupings suggested by the records managers and administrators match the generic model elements. However, the categorization of IT personnel according to their roles and responsibilities would enable them to be trained in ERM in their respective areas of concern.

In the final focus group discussion, the representatives of the different record keepers confirmed their belief that government staff at all levels need knowledge and/or skills in ERM to support their respective roles and responsibilities.

Figure 10.7. Data on different target groups to be educated, derived from of the generic model and focus group discussions.

Programmes	Generic Model Elements	Archivists' Views	Records Managers' Views	Administrators' Views	IT Personnel Views
Education	Different types of players: ▪ Archivists ▪ Records managers ▪ Administrators ▪ IT personnel Different levels of players: ▪ Tactical ▪ Managerial ▪ Supervisory ▪ Operational	Different types of players: ▪ Archivists ▪ Assistant archivists Different levels of players: ▪ Archivists (length of service) ▪ Assistant archivists (length of service)	Different types of players: ▪ Records managers Different levels of players: ▪ Records managers (Managerial)	Not applicable	Not applicable
Training	Different types of players: ▪ Archivists ▪ Records managers ▪ Administrators ▪ IT personnel Different levels of players: ▪ Tactical ▪ Managerial ▪ Supervisory Operational	Different types of players: ▪ Archivists ▪ Assistant archivists ▪ Archives assistants Different levels of players: ▪ Archivists (length of service) ▪ Assistant archivists (length of service) Archives assistants (length of service)	Different types of players: ▪ Records managers ▪ Assistant records managers ▪ Records staff Different levels of players: ▪ Records managers (Managerial) ▪ Assistant records managers (Supervisory) ▪ Records staff (Operational)	Different types of players: ▪ Administrators ▪ Assistant administrators ▪ Administrative staff Different levels of players: ▪ Administrators/ Division One (Tactical/Policy makers) ▪ Administrators/ Division One (Managerial) ▪ Assistant administrators/ Division Two (Supervisory) ▪ Administrative staff/Division Three (Operational)	Different types of players: ▪ IT managers ▪ System analysts ▪ Programmers ▪ Data base administrators Different levels of players: ▪ IT managers ▪ System analysts ▪ Programmers ▪ Data base administrators

3.4 **Fulfilling the need for education and training**

3.4.1 *Programmes*

The archivists made use of the opportunity in the final focus group discussion to inform the participants of the National Archives' legitimate role and responsibility in the area of

ERM in all government departments. The archivists further suggested that for records practitioners a modular accredited programme was suitable as this could break down boundaries between subjects and courses, thereby enabling individuals to choose subjects relevant to their respective responsibilities.

In the final focus group discussion, participants agreed that only the archives and record staff (at certain levels) needed to have accredited educational qualifications in ERM, as ERM constitutes their core business. The administrative staff and IT personnel should receive the relevant training as suggested in their individual focus group discussions. However, the records managers were skeptical that the Diplomatic and Administrative (ADS) or ASS officers who were assigned the job as departmental records officers would be interested to be formally educated in ERM. This is because their present scheme (ADS or ASS) does not reward such qualifications.

Even though the administrators and the IT personnel argued in their respective focus group discussions that they did not need accredited education, in the last focus group discussions, however, they acknowledged this need. They suggested that the new recruits (administrators and IT personnel) in the civil service should be provided with accredited education. This could be done by incorporating subjects in ERM into the existing in-service educational and training programmes provided by INTAN (the training institute for civil servants that is placed under the Prime Minister's Department). It is generally true that for the administrators and IT personnel, education refers to nothing more than the programmes organized by INTAN. To all intents and purposes the courses can lay no claims to the name 'education' as such. These programmes cannot be said to be accredited as there are no professional bodies in Malaysia that are able to provide accreditation to any such educational programme.

Even though the IT people and administrators have a big role to play in ERM (and should as such be educated in ERM), they were not aware of their role. This is understandable, as ERM is generally seen by the IT people and the administrators as

merely constituting a small part of the overall administration of both archives and records.

Figure 10.8. Data on education and training programmes derived from the generic model and focus group.

Programmes	Generic Model Element	Archivists' Views	Records Managers' Views	Administrators' Views	IT Personnel Views
Education	▪ Accredited programmes validated by professional associations	▪ Accredited programmes in local universities and in advanced countries such as Canada and UK	▪ Accredited programmes for the Diplomatic and Administrative officers provided by INTAN	Not applicable	Not applicable
Training	▪ Vocational/ Competence based programmes ▪On-the-job learning.	▪ A month long practical training or attachment at the national archival institutions in advanced countries such as Australia, Canada, UK and US for archivists and assistant archivists ▪ Attending international conferences, seminars and workshops on ERM for archivists ▪ A week internal training for archives assistants given by experienced senior archivists.	▪ Few days on-the-job training for all record staff ▪ Few days training in the lab for all records staff ▪ One week practical training at the National Archives for all records staff ▪ Short attachment or visit to advanced countries on ERM for records managers.	▪ Half a day awareness briefings for policy makers ▪ One day workshop for managerial level ▪ One week induction courses for administrative staff ▪ Few days hands-on practical training for administrative staff ▪ Few days specialized on-the-job training for administrative staff.	▪ Short briefings for IT managers on awareness ▪ Few days coaching by vendors for system analyst, programmers and data base administrators ▪ Few days practical training with experts for system analysts, programmers and data base administrators.

The generic model considered vocational competence-based and on-the-job learning to be the most effective method of providing the target groups with skills and competence. In the Malaysian context, vocational competence-based training, based on the needs for skills of the different levels of the target groups as described in Figure 10.8, was suggested and cited in several different ways by the different record keepers.

3.4.2 *Curriculum*

Even though the curriculum or subjects suggested by the different record keepers differed, there was similarity in the subject content proposed for inclusion by the archivists and records managers. The inclusion of information management as a subject was considered crucial by all of the record keepers as it is closely associated with ERM. The archivists suggested the target groups should have knowledge and skills in relation to all types of records, but the records managers' concerns were specifically confined to electronic records which posed a challenge to them.

In the Malaysian case, the core skills and specialist skills required differed according to specific roles and responsibilities. The archivists were more concerned about requisite skills for the management of their existing archival materials (consisting, almost completely, of traditional or conventional records) for the benefit of posterity. The records managers and administrators felt that the target groups needed to learn how to manage electronic records (electronic version of paper records and paper versions of electronic records), as these records are commonly created and used in the Ministries. The administrators emphasized the primacy of subjects pertaining to legal issues, policy guidelines and standard procedures, as they were more concerned with administrative procedures, and assignment of roles and responsibilities to their subordinates. The IT personnel were concerned with digital preservation, metadata and migration as these are closely linked to systems development and maintenance. The emphasis varied according to the respective areas of responsibilities. This is a natural outcome, arising from the independent concerns of the different professions.

The administrators in the final focus group discussion suggested that e-mail management should be included in their training, as e-mail has become a convenient form of communication in the government. The representatives of the archivists, records managers and IT personnel supported the idea as they discussed the issue of e-mail official copy versus convenience copies. Other than e-mail management, legislation and policy were also mentioned by the Malaysian record keepers as these were common issues.

Figure 10.9. Data on the most appropriate curriculum derived from the generic model and focus group discussions.

Programme	Generic Model Elements	Archivists' Views	Records Managers' Views	Administrators' Views	IT Personnel Views
Education	Core knowledge ▪ Theories, principles standard practices and tools for managing records and archives and information management. ▪ Role of records in supporting organizational objectives as well as legal and other regulatory requirements. ▪ Core knowledge for target groups to perform new roles and responsibilities. Specialist knowledge ▪ Building partnership: record keeping concepts for non-ICT professionals; concepts and trends in ICT for non-ICT professionals; concepts and trends in business operations: -impact of ICT on record keeping. -the business perspective -design and implementation of record keeping systems -records management policy -strategic organization driver.	Core knowledge ▪ Basic concepts on all types of records. ▪ Information management. ▪ Impact of IT on RM. ▪ Introduction to ERM. ▪ Managing electronic records. ▪ Legislation, policy and government requirements. Specialist knowledge ▪ Creation and capture of electronic records. ▪ Compiling keyword thesaurus. ▪ Metadata ▪ Proper documentation ▪ Records transfer ▪ Disposition of electronic records ▪ Preservation of electronic records and information ▪ Disaster control planning ▪ Management of electronic archives ▪ Records centre and user services ▪ Access systems ▪ Standards and process management. ▪ Customer services and communication.	Core knowledge ▪ Life cycle concepts of electronic records. ▪ Information management ▪ Principles and theories of ERM. ▪ Different types of electronic records. ▪ Legislation and policy. ▪ Standard procedures. Specialist knowledge ▪ Creation ▪ Maintenance ▪ Access ▪ Retrieval ▪ Disposition ▪ Retention ▪ Transfer to records centre ▪ Records centre operations ▪ Transfer to Archives.	Not applicable	Not applicable

Programme	Generic Model Elements	Archivists' Views	Records Managers' Views	Administrators' Views	IT Personnel Views
Training	Core skills ▪ Occupational standard practices on ERM, archives and information management. ▪ Work processes to protect the interest of archives in a digital environment. ▪ Core skills for the target groups to perform new roles and responsibilities. Specialist skills ▪ Design process and implementation of electronic record keeping systems. ▪ Electronic records survey and scheduling; archives and permanent preservation; legal issues; information and communication technologies; users services and user relations. ▪ Work processes for electronic records for long term preservation. ▪ Skills to help records managers and archivists to become specialists who can engage from the earliest possible moment in defending the interest of record keeping and archiving in the organization.	Core skills ▪ Standards and practices in managing all types of records. ▪ ERM functional requirements. ▪ Standard and practices in managing electronic archives. ▪ Government requirements: legislation, policy and directives. Specialist skills ▪ Receiving electronic records and archives from departments. ▪ Arranging electronic records and archives. ▪ Describing electronic archives/finding aids. ▪ Preserving electronic archives. ▪ Accessing archival materials. ▪ Research room/user services.	Core skills ▪ Managing paper records and their electronic counterparts. ▪ Electronic record keeping. ▪ Standard and practices on ERM. ▪ Government policy on ERM. Specialist skills ▪ Creating electronic records. ▪ Scanning and digitizing. ▪ Filing systems. ▪ Naming convention. ▪ Storing and retrieving. ▪ Managing e-mail. ▪ Preparing retention schedules. ▪ Implementation of retention schedule. ▪ Maintaining electronic records in office environment. ▪ Transferring electronic records to records depository. ▪ Transferring electronic records to Archives.	Core skills ▪ Legislation and legal issues. ▪ EG structure related to ERM. ▪ Accountability and electronic records. ▪ Security aspects of electronic records. ▪ Government policy and procedures on ERM. ▪ Allocations of roles and responsibilities. Specialist skills ▪ Help ensuring integrity and authenticity of electronic records. ▪ Filing systems in electronic environment. ▪ Managing electronic records and their paper counterparts. ▪ Managing e-mail. ▪ Disseminating electronic records. ▪ Sharing electronic records. ▪ Storage and retrieval. ▪ Maintaining electronic records in the organization.	Core skills ▪ Electronic record keeping requirements. ▪ Electronic record keeping systems. ▪ Government policy and procedures on ERM. Specialist skills ▪ Designing system that conform to ERM requirements. ▪ Filing records in systems. ▪ Creation ▪ Metadata ▪ Digitisation ▪ Managing e-mail ▪ Retention ▪ Disposition ▪ Migration ▪ Digital preservation.

3.4.3 *Pedagogic approach*

Upon testing the generic model elements among the Malaysian record keepers, learning approaches similar to Kolb's (1984) were suggested for education. Even though these approaches were cited in a number of different ways, the fundamentals remained the same.

In their group discussions, the archivists suggested that the learning approach must be able to convey knowledge on ERM to the target groups, in that the archivists and the assistant archivists would gain an understanding of ERM concepts and theory to be applied in their real work situation. They argued that the learning process should include some case studies on the EG recordkeeping systems, and believed that understanding could be acquired through practical training under the supervision of facilitators. At the same time the target groups must participate in knowledge sharing sessions, where facilitators should provide guidance through feedback.

The records managers cited two learning outcomes, namely the acquisition of knowledge and secondly competence in ERM. They emphasized that the academic programmes should help records officers to: (a) gain conceptual understanding of ERM, (b) bring their working experience to the classroom and relate them to concepts and standards procedures, (c) gain detailed understanding of ERM to tackle the assigned roles and responsibilities, and (d) acquire ability to exploit the knowledge that they have acquired for strategic planning in the area of ERM.

By comparison, the administrators' discussion on the pedagogic approach centred around the need-to-know basis. They believed that the policy makers as well as executives at the managerial levels needed half-day awareness briefing sessions on policy and procedures, as it was deemed necessary for them to get involved, and to allocate appropriate roles and responsibilities to their subordinate staff.

Figure 10.10. Data on pedagogic approach derived from the generic model and focus group discussions.

Programmes	Generic Model elements	Archivists' Views	Records Managers' Views	Administrators' Views	IT personnel Views
Education	*-concrete experience:* learner personally involved in something and gains feedback. *-reflective observation:* feeling and thoughts emerging from reflection and analysis that generalizations or concepts may be generated. *-abstract conceptualization*: from generalizations and conceptual understanding the new situation could be tackled effectively. *-active experimentation:* the newly learned concepts must be tested out in new situations where the learner makes a link between theory and action by planning for the action and carrying it out. (Kolb 1984; Rae 1997; Truelove 1997).	▪ Knowledge gained through teaching method. ▪ Knowledge on concepts and theory on ERM to be tested in real work situation in the Archives. ▪ Understanding acquired by doing some exercises and corrected by facilitator. ▪ Knowledge on the EG cases. ▪ The target groups must be involved in discussions of their experience and gain feed back from facilitators.	▪ Conceptual understanding on ERM. ▪ Detailed understanding of ERM to tackle the assigned roles and responsibility. ▪ To link understanding on theory to carry the task effectively. ▪ To bring existing experience to the classroom and relate to concepts and standard procedures. ▪ Ability to relate the theory learned to come out with strategic planning for ERM.	Not applicable	Not applicable

Figure 10.11 below represents Brookes's approach (1995) to acquisition of skills through skills training, which corresponded to the Malaysian record keepers' suggestions. The archivists argued that the training programmes must be able to transfer skills, specifically on ERM to the archival staff. They suggested that these skills were to be acquired

through formal face to face instruction, as well as practical learning through problem solving techniques.

The records managers emphasized that records officers and the registry staff needed skills, as most of the records staff have basic knowledge of the principles of conventional records management. They believed that the most appropriate learning approach in training was hands-on practical training, aimed at gaining skills.

The administrators suggested the administrative staff can gain or acquire skills in ERM through on-the-job training, off-the-job training, instructions by facilitators on specific tasks, skills gained through demonstrations, and observation of real examples such as handling of filing systems for electronic records.

The IT personnel felt that skills in the area of ERM could be gained in a laboratory setting; and through coaching by experts, practical training and systems demonstrations. They believed that the best approach was to devise a process of evaluation by experts on the level of competence gained by the IT staff who had undergone the training.

Figure 10.11. Synthesis of data pertaining to pedagogic approach to training deduced from the generic model set against views of the focus groups.

Programmes	Generic Model Elements	Archivists' Views	Records Managers' Views	Administrators' Views	IT Personnel Views
Training	▪ Competence-based: (Brookes's (1995) approach: *-trial and error:* traditional form of practical learning activity. Also refered to as feedback to confirm if the attempt is successful or otherwise. *-being told or instructed:* prescriptive approach placing trainer in the role of 'expert', relies upon trainer to pass on the skills required.	▪ Learning to deliver skills specifically on ERM. ▪ Skills to be acquired through instructions by facilitator. ▪ Practical learning in order to find out if skills are transferred to target groups. ▪ Training on problem solving on ERM.	▪ Hands-on practical training. ▪ Skills to face the challenges posed by electronic records. ▪ Trainers to pass the required skills on ERM. ▪ Target groups should be encouraged to demonstrate their skills through practical exercises.	▪ On-the-job training. ▪ Off-the-job training. ▪ Instructions by facilitators on specific tasks on ERM. ▪ Skills gained through demonstrations. ▪ Seeing real examples for example filing systems for electronic records and naming conventions.	▪ Skills acquired through lab work. ▪ Practical training. ▪ Skills delivered by experts on ERM. ▪ Systems demonstrations.

	-copying or imitating someone else dependent on demonstrator providing a positive demonstration of the skill or task, i.e. the correct way to do something. *-thinking for yourself reflection:* learning occurs when learners are encouraged to think about something that learner have done, some skill learner have attempted to demonstrate or some problems learners are able to reflect on what went right, what went wrong and *why*.				

3.4.4 *Mode of delivery*

The archivists cited several modes of delivery they believed to be suitable for the archival staff to gain knowledge and skills in ERM. Flexibility involving learning methods such as distance learning, web based learning, independent study and part time study other then face to face mode were recommended. The participants of the archivists' focus group felt that they should be given the freedom to choose the mode of delivery most suitable for them. However, classroom face to face instructions and on-the-job learning were considered to be the most suitable means of transferring skills on ERM through training sessions as illustrated in Figure 10.12.

The records managers believed that it was important for trainers to adopt as many approaches as possible to provide flexibility in ERM education and training. The reason for this was that the target groups may not be able to find time outside their working hours. Their special needs should be taken into consideration when designing and developing education and training programmes. They were in favour of the classroom face-to-face approach, distance learning, internet learning and open learning modes of delivery for education. They felt, however, that if such training was not incorporated into INTAN's programmes, the staff would not be interested. This is because they were not

professional records managers, and the expected qualifications were not seen to guarantee them any prospects for promotion. The situation might be considered positively if there was a place for records managers within the overall scheme of service in the public sector. The records managers agreed that classroom face to face approach and laboratory work were suitable modes of delivery for training, as the target groups needed to gain skills through practical hands on sessions. By comparison, the administrators felt that the most effective mode of skills transfer was classroom style face to face on-the-job learning. On the other hand the IT personnel emphasized the importance of gaining skills through laboratory work and face to face interaction.

For mode of delivery, the final focus group agreed on the various possible modes of delivery in order to ensure some degree of flexibility in education.

Figure 10.12. Synthesis of data of the generic model and the focus group discussions on mode of delivery

Programmes	**Generic Model Elements**	**Archivists' Views**	**Records Managers' Views**	**Administrators' Views**	**IT Personnel Views**
Education	▪ Classroom face to face ▪ Distance learning ▪ Web- based learning ▪ Independent study.	▪ Classroom face to face ▪ Distance learning ▪ Web-based learning. ▪ Independent study. ▪ Part time study	▪ Classroom face to face ▪ Distance learning ▪ Internet ▪ Open learning	Not applicable	Not applicable
Training	▪ Classroom face to face ▪ Open learning ▪ Web-based learning ▪ On-the-job learning -mentoring -coaching.	▪ Classroom face to face instructions ▪ On-the-job learning.	▪ Classroom face to face ▪ Lab work.	▪ Classroom face to face ▪ On-the-job learning.	▪ Lab work with face to face interaction.

3.4.5 *Achievement*

Academic qualifications constitute a common element of achievement in education. The generic model is based on a modular credit based qualification that is professionally recognised. In the Malaysian case, the archivists believed that they needed to be dependent on advanced countries for their professional education, as Malaysia lacked expertise in ERM. They brought up the issue of recognition of the programmes by professional associations such as in the UK and US. However, the majority of the participants believed that this was not possible as records and archival professional organizations were non-existent in Malaysia. In the area of training, obtaining the certificate of attendance was the only form of achievement that they could think of.

The records managers did not discuss much on this subject as they knew little of the existing accredited academic programmes that were available locally or abroad. They also lacked awareness on the available training programmes in ERM. However, they suggested that INTAN's diploma programmes should incorporate subjects on ERM so that the newly appointed ADS officers who were assigned the responsibility to manage electronic records would get their requisite knowledge in ERM. The participants also cited several examples of training they had undergone at the National Archives and other related training courses on IT, for all of which they were awarded certificates of attendance. They suggested that after completion of the training sessions, the records officers and the records staff should be awarded certificates of attendance. Similarly with the administrators, they felt that it was sufficient for the administrative staff to be awarded a certificate of attendance.

In their individual focus group, the IT personnel proposed the idea of evaluation by experts on the level of competence gained by the IT staff, and for this it was felt that a certificate of achievement should be awarded in order to ensure a meaningful training outcome. They also believed that this achievement could improve their prospects for promotion. However, in the last focus group, the archivists, records managers and administrators argued that certificate of achievement called for formal examinations, evaluation of participants' work by a panel of experts or external examiners, as well as the involvement of the national accreditation committee. These conditions demand extra

resources, and require mechanisms and expertise which were seriously lacking. However, they agreed that INTAN should provide accredited modular programmes on records management, with the National Archives providing the training facilities.

Figure 10.13. Synthesis of data from the generic model and the focus group discussions on achievement of education and training in ERM

Programmes	Generic Model Elements	Archivists' Views	Records Managers' Views	Administrators' Views	IT Personnel Views
Education	▪ Accreditation: -academic modular/credit based qualification. -professional recognition.	▪ Academic qualification.	▪ Academic qualification as part of the Diploma of Public Administration provided by INTAN for the officers of the Diplomatic and Administrative services.	Not applicable	Not applicable
Training	▪ Certificate of attendance.	▪ Certificate of attendance.	▪ Certificate of attendance.	▪ Certificate of attendance.	▪ Certificate of achievement through assessment by experts.

4. Applicability of the Generic Model to the Malaysian Case

4.1 *The function of the generic model as an overall framework for reference*

The model matches the situation in Malaysia, as shown in the data collected from the representatives of four categories of record keepers involved in the focus group discussions. Even though the Malaysian record keepers had their respective views of the model, they were in agreement on the relevance of the three dimensions (context/drivers, target to be educated and trained and fulfilling the need for education and training) as shown in Figure 10.1, 10.2, 10.3 and 10.4. The generic model of vocational and professional education and training for ERM is generally applicable to the Malaysian context although there are variations because of the reasons highlighted in Section 3 above in relation to:

(a) context/drivers which are conditioned by the varying. educational and training needs of the record keepers;

(b) the paramount urgency of forging partnership through high level strategy and centralised policy and directives;

(c) the context of the EG required almost everyone in the public sector to know, understand and/or be skilful in ERM; and

(d) the influence of the varying and specific needs of each target group upon the nature of the educational and training curricula and approaches that need to be explored and pioneered in fulfilment of the specific requirements in the Malaysian public sector in relation to the EG.

4.2 *Condition under which education and training suggested in the generic model would work in the Malaysian context*

The single most important barrier that was identified through the focus group discussions was the lack of high level support in the Malaysian government for the strategic implementation of ERM. The archivists, records managers, administrators and IT personnel believed that the success of this proposed education and training model was dependent primarily on ERM policy which could be established through partnership between the National Archives, the Prime Minister's Department, the Treasury and the Public Services Department. Through such policy, the requisite infrastructure and facilities for education and training would be provided by the Malaysian government.

5. Conclusion

This chapter draws firm conclusions about the relevance of the generic model to the Malaysian context. The literature review and the pragmatic examples in the generic model of vocational and professional education and training for ERM has suggested that partnership building between the different key players was a function of common education and training. However, this was not so in the Malaysian context. What was

perceived as critical by the Malaysian record keepers was first to establish partnership among the key stakeholders at the strategic level, as ERM needs high level support in the Malaysian Federal Government. To the Malaysian record keepers who participated in the focus group discussions, this issue needs to be addressed first, rather than the issue of developing partnership among the record keepers themselves through common education and training in ERM. However, the generic model had provided the basis for developing an understanding of the dynamics involved in the implementation of educational and training initiatives in ERM for the record keepers aimed at the success of the EG in Malaysia.

PART V:

CONCLUSION

- Chapter Eleven – Discussion of Results and recommendations

CHAPTER ELEVEN

DISCUSSION OF RESULTS AND RECOMMENDATIONS

This chapter discusses the results of the study and proposes suggestions for future research work.

1. Introduction

Although models constitute a typical outcome of modern research in library and information science, until the time of writing, none have been constructed to represent the education and training required for archivists, records managers, administrators and IT personnel to manage electronic records. This study aimed at using a model of education and training in ERM as a framework for reference for the Malaysian record keepers to acquire knowledge and skills needed to manage electronic records.

In this study, a model was developed based on ideas forwarded by Nachmias & Nachmias (1993) who suggested that in social research a model can be used to represent the characteristics of some empirical phenomenon. According to them this could be done because the model can be used to explain the components of the phenomena under study and the relationship between the components of the phenomena. Since a model can represent a logical organisation of the concepts related to the phenomena, the writer of this study decided that a model could present and explain the issues raised in this study.

2. How has the generic model of education and training for ERM fulfilled the aims and objectives of the study?

How has the model addressed the issues raised in this research? The generic model developed in Phase 3 of the study represents a logical organisation of the education and training concepts in the area of ERM. As suggested by Nachmias & Nachmias (1993) the model has successfully represented "an abstracting from reality that serves the purpose of ordering and simplifying our view of reality while still representing its essential characteristics based on related concepts". In this case the model of vocational and professional education and training for ERM is a simplified representation of a

particular reality. In this study the reality is: (a) the various international education and training programmes developed for the archivists, records managers, administrators and IT personnel as record keepers defined in this study (identified through the survey in Phase 1); and (b) the issues of record keepers' lack of knowledge and skills to manage electronic records and their need for related knowledge and skills to support their roles and responsibilities in ERM in the Malaysian Federal Government (identified through the survey and in- depth interviews in Phase 4).

With regard to the generic model, the writer observed that education and training concepts provided the initial basis for model construction. The study sought to develop a generic model which exhibited relationships among the three dimensions of education and training that were identified through the literature review relating to the key concepts of education and training namely context/driver, target to be educated and trained and fulfilling the need for education and training presented in Chapter Five.

The construction of the generic model for vocational and professional education and training in ERM for the Malaysian record keepers went through several successive processes. Firstly, education and training concepts were identified to provide the conceptual framework for the generic model. But this was not sufficient because the problems embodied in the education and training identified by the survey and interviews with the Malaysian record keepers in Phase Four of the study needed to address the lack of knowledge and skills of record keepers currently employed by the Malaysian Federal Ministries. Thus a suitable model that addresses these problems should be based on the concepts of vocational and professional education and training. However, one of the objectives of the study was to develop a generic model for vocational and professional education and training in ERM. To achieve this objective, the underlying concepts of the pragmatic examples of education and training on ERM for the record keepers (defined in this study), which were identified through the survey in Phase 1 of the study, were analysed and mapped against the concepts of the generic model of vocational and professional education and training. This led to the development of a generic model for vocational and professional education and training specifically in ERM.

The final objective of the study was achieved when the generic model for vocational and professional education and training was tested with the Malaysian record keepers through five focus group discussions undertaken in Phase Five of the study. The generic model as perceived to match the situation in Malaysia, despite the general recognition of differences in details arising from the varying needs of the Malaysian record keepers within the EG environment and the Malaysian government bureaucracy which was presented in detail in Chapter 10.

In summary, the overall framework of the generic model for vocational and professional education and training in ERM which was applicable to the record keepers in the Malaysian context consisted of the following concepts and aspects:

- *Key concepts of education and training*

In order to achieve the first aim and objective of the study i.e to analyse the education and training programmes in ERM and develop a model, first and foremost, key concepts of education and training were identified as the basis for the construction of a model. The differences and similarities between the various concepts underpinning education and training as put forth by Darkenwald & Merriam (1982), Dearden (1984), Jarvis (1985), Noe (1986), Goldstein & Gesner (1988), Barrow & Milburn (Tight, 1996), Bines & Watson (Tight, 1996), Pring (1993), Brookes (1995), Tight (1996), Cowling (2003), Konrad (2004) and many others were used to establish the conceptual foundation explaining the phenomenon of education and training. From the various concepts emerged three distinct dimensions of education and training namely "context/drivers", "target to be educated and trained" and "fulfilling the need for education and training" which explained the causal relationships of education and training activities (see Chapter Five).

- *Key concepts of vocational and professional education and training*

Upon examining the needs of record keepers in terms of knowledge and skills required to manage electronic records in the specific context of Malaysia i.e the second aim of the study, a model suitable to address problems associated with

records practitioners and professionals should be based on vocational and professional education and training. To achieve this objective, the various concepts of vocational and professional education and training forwarded by Jessup (1990 & 1991), Tight (1996), Hoyle & John (1995), Becher (1994), Jones & Joss (1995), Hyland (1994), Schon (1988), Siegrist (1994), Bines & Watson (Tight, 1996), Raggatt & Williams (1999), UNESCO (in British Council 2004), the Malaysian Education Ministry (Deraman et al , 2002) and many others were mapped against the generic model of education and training explained above (see Chapter Five). Thus a generic model of vocational and professional education and training was established. However, the first aim and objective of the study to develop a generic model of education and training for ERM had yet to be achieved completely.

- *Key concepts underpinning the pragmatic examples of education and training in ERM developed in Europe and UK.*

In order to fully achieve the first aim and objective of the study, the concepts which underpinned the pragmatic examples of education and training in ERM developed in Europe and UK (which were identified through high level survey of national governments and related professional organisations in Phase One and data collected through in-depth interviews in Phase Two of the study), were analysed and subsequently mapped against the elements of the generic model of vocational and professional education and training. Thus in Phase Three of the study, a generic model of vocational and professional education and training for ERM was established based on three elements, namely these common elements of the pragmatic examples that match the generic elements of the generic model, non-common elements that match the generic elements of the generic model, and new elements that were common to the pragmatic examples (see Chapter Seven).

- *Findings/issues that emerged from the focus group discussions with the Malaysian record keepers when testing the generic model of education and training for ERM.*

a) Views on Model diagram: The model diagram was perceived differently diagrammatically (see page pages 276, 277, 278 and 279) but the "context/driver", "target to be educated and trained" and "fulfilling the need for education and training" remain as distinctive dimensions of education and training as in the original generic model developed in Chapter Seven illustrated in Figure 7.15 on page 185.

b) Context/driver (Establishing the need):

i) Only the archivists and the records managers believed that they needed education and training. The administrators and IT personnel felt that they needed only training in ERM.

ii) The EG emerged as a common context/driver for the Malaysian record keepers for education and training even though other reasons were also cited where several reasons matched the elements of the generic model.

c) Context/driver (Building partnerships):

Developing partnerships under a common education and training programme among the record keepers did not emerge as an important issue as in the generic model. What was urgently needed, as perceived by the Malaysian record keepers, was developing partnerships with the policy makers at the strategic level for the implementation of ERM in the Federal Ministries.

d) Target groups to be educated and trained:

The record keepers had different ideas about which target groups and levels needed education and/or training as they focused their attention on the key players in their respective schemes of services. They suggested everyone in their organisations and at every level needed education and/or training in ERM.

e) Fulfilling the need for education and training:

i) Only the archives and records staff believed that they and their subordinates at their related levels needed to be given accredited educational qualification in

ERM, as ERM is their core business. Where as the administrative staff believed that training in ERM was sufficient for them and their subordinates.

ii) Accredited programmes in ERM for the archivists and records managers and competence-based training for the administrative staff and IT personnel.

iii) The subjects on ERM suggested by the archivists and records managers were based on the life cycle concepts as they were used to managing paper records. The administrators emphasised the primacy of subjects pertaining to the Federal Government administrative requirements. The IT personnel were concerned more with the technical related areas such as subjects on digital preservation and metadata. However, all the record keepers felt that e-mail management was the concern of everyone in the organisation.

iv) The Malaysian record keepers favoured Kolb's (1984) approach to education and Brookes' (1995) pedagogic approach to training as in the generic model.

v) Various possible modes of delivery for education and training to provide some degree of flexibility as the target groups were working staff.

vi) Academic qualification in ERM was needed by the archivists and records managers for education and certificate of attendance for the administrative staff and IT personnel who have completed their training in ERM.

f) Implications of the different requirements of education and training in ERM:

The different record keepers came to an agreement that not all of the different record keepers presently employed by the Malaysian Government needed to have formal education and training, as this would have implications on their present core responsibilities and budget allocations. They felt that the lack of policy on this matter would prevent Ministries from allowing their staff to be absent from work to attend any educational and training programmes on ERM.

g) Implication of need to build a mutually rewarding partnership:

The archivists believed a mutually rewarding partnership should be based on two factors. Firstly, the archivists' thorough understanding and competence on ERM, and secondly a recognition of their legitimate roles and responsibilities by other key players and stakeholders in the public sector. The records managers, administrators and IT personnel insisted that high level strategy and policy which needed high level support was the key to successful partnership in the area of ERM.

h) Conditions for effective implementation of education and training in Malaysia:

It was believed that success factors in ERM education and training in the Federal Governement of Malaysia were dependent on: a) smart partnership between the National Archives and the decision making central agencies; b) top management commitment to ERM in every Ministry; c) the use of existing education and training facilities to deliver courses and programmes on ERM at INTAN and the National Archives; and d) an urgent need to train the trainers.

3. Implications for the generic model

The generic model advanced in this study is an important trigger for development and should serve as a starting point for ERM educators, especially those in the national archival institutions and professional organisations, to engage not only in constructive dialogue regarding its conceptual framework, but also to inspire and encourage various research endeavours with the intention to enhance the research in education and training in ERM area, and ultimately to establish it as a long overdue effort and initiative.

The findings and suggestions by the focus group participants of the study concern mainly further validation of the concepts and applications of the generic model, as well as examination of the three dimensions (context/driver, target and fulfilling the needs) within cross-cultural context. Furthermore, the obvious differences between the issue of context/driver, partnership building, target to be educated and trained and ways to fulfill education and training between the Malaysian context and the European and UK context are significant issues which simply reflect multiple realities as suggested by Nachmias &

Nachmias (1993), and, if an appreciation could be gained of the reasons behind the variations, such understanding might lead to the enlargement and enrichment of the generic model. Shenton (2003) suggests that such an attitude is consistent with what Dervin (1997) considers should be key principles within information-seeking research, namely: "To posit ... every contradiction, every inconsistency, every diversity not as an error or extraneous but as fodder for contextual analysis. To ask and re-ask what accounts for this difference or this similarity and to anchor possible answers in time-space conceptualisings".

The triangulation approach of this study and its main outcome, that is, the generic model could provide a framework and a more systematic perspective towards the in-depth tapping of those issues.

Last but not least, as already indicated in Chapters Five and Seven, the conceptual analysis of education and training and the pragmatic examples included in this study, would contribute to such fund of knowledge and information as would serve to facilitate the work of scholars in the field of records management.

Therefore the generic model for the vocational and professional education and training in ERM in Figure 7.15 must be understood within the context of the particular characteristics of the country (geographical area) and organisations in which the fieldwork was carried out.

4. General outcomes and conclusions

As already discussed, this study was launched with the primary aims of analysing the international education and training programmes in ERM for record keepers, and developing a model; examining the needs of record keepers in terms of knowledge and skills required to manage electronic records in the specific context of the public sector; and providing a suitable vocational and professional education and training based on a suitable model for record keepers in Malaysia for the acquisition of knowledge and skills

needed for the effective management of electronic records. The research findings have yielded the following results:

- A model based on the analysis of education and training concepts and concepts underpinning the international education and training programmes in ERM for record keepers has been proposed in line with ideas put forth by Nachmias & Nachmias (1993) through the development of a generic model for vocational and professional education and training in ERM.

- A high degree of consensus between quantitative and qualitative data has been achieved with regard to the Malaysian record keepers' needs for knowledge and skills to manage electronic records in the Federal Ministries.

- Within the context and the purpose of this research, validation of the generic model for vocational and professional education and training in ERM has occurred at an acceptable level on account of analysis based on the most recent qualitative data obtained through focus group discussions with the Malaysian record keepers undertaken in 2004.

- By implication, the underlying concepts underpinning the generic model for vocational and professional education and training in ERM have been validated within the particular characteristics of the geographical area (in this case Malaysia) and organisations (in this case, the Malaysian Federal Ministries) in which the fieldwork was carried out. In order to assess the extent to which the model may pertain to record keepers in other settings, similar projects employing the same methods but conducted in contrasting environments or in other countries would be of great value.

- Finally, the triangulation method that was adopted as the central force of the research design, by generating various quantitative and qualitative results regarding the issues, was instrumental in increasing and thus improving the

validity of the data gathered through questionnaires, interviews and focus group discussions.

As must be evident from the discussion of the findings, but also the presentation of the above conclusions, all research questions stated in Chapter Two, have been addressed and answered successfully. Taking a step beyond the confines of the empirical study, it can be claimed that not only the process of developing a generic model for vocational and professional education and training in ERM for administrators, archivists, records managers and IT personnel, but also the identified knowledge and skills in ERM within the generic model even as a tentative, first attempt, have now come into existence and contribute to the development of new knowledge. These are supported by a defensible body of evidence, and can serve as the basis for not only current practice, but also future research on education and training in ERM.

The combination of the various education and training concepts with the conceptual foundation of the pragmatic examples of education and training in ERM, seems to have served its purpose well, thus indicating that education and training in ERM is headed towards a conceptually sound foundation.

The general outcomes of the study are by no means fully conclusive. Instead they should be considered under certain limitations (see Chapter Four), most important of which were the time scale and nature of the study as well as the limitations of the focus group that participated in the evaluation of the generic model. Therefore, it must be pointed out that data analysis procedures were on no occasion carried out with the intention to make inferences and, consequently generalisations on the findings. On the contrary, results derived from data analysis were considered to be descriptive and merely indicative of the complex nature of the issues under study. In other words, these results must on no account be considered as being conclusive.

5.0 WHAT NEEDS TO HAPPEN?

5.1 The Malaysian context

Encouraging the use of the model developed in this study is a challenging task. In the Federal Government of Malaysia much more has to happen at the various levels of the administrative system before the model could be adopted for the education and/or training of record keepers. In relation to the implementation of this model, changes need to happen at all administrative levels as suggested by the various focus group discussions (see Chapter 10) -- national policy and electronic records management practice – to effect changes in record keepers learning about electronic records management, at which implementations are targeted. Administrators, archivists, IT personnel and records managers need to be educated and/or trained in electronic records management, while at the same time it is essential to build a new level of awareness at the policy level. It will be important to provide information to policy makers to help them to understand why it is so important to manage electronic records. If they can understand that there will be benefits for them if electronic records are managed well and risks if electronic records are not managed, they are likely to give higher priority to education and training in this area. Unless there is awareness among senior policy makers of how electronic records will contribute to the work of government, education and training the area of electronic records will not be a priority, and the model developed in this thesis will not have its intended impact.

5.1.1 *Policy, administration and practice*

Education and training of government civil servants including record keepers must involve an integrated approach to policy, administration and professional practice as suggested by the record keepers in the focus group discussions. Educational change is likely to take place as part of a much larger communication among education policy, administration and practice that must occur for the educational system to function effectively (Elmore & Mclaughlin, 1988). Thus, one of the basic elements which determines the success of any educational changes in managing electronic records is the understanding, cooperation, and learning of all parties involved. The

National Archives of Malaysia can play an important role in supporting this new approach. The Director General of the Archives is a senior government official who can help to support awareness through interaction with senior departmental colleagues by sharing information on the requirements and benefits of managing records effectively as part of the Government of Malaysia's commitment to the electronic working environment.

In particular, the Director General can work closely with the Director General of the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) in the Prime Minister's Office to create a new environment of awareness. MAMPU plays a key role nationally in administration and human resource planning across the Federal civil service. Its mandate covers such areas as file management, work procedures, good practice in governance, quality management and ICT security, ICT policy and planning and electronic government development. If electronic records management is to be developed, MAMPU will be an essential partner for the National Archives in creating an atmosphere where there is awareness and understanding of the need to integrate electronic records management in strategies for electronic government. MAMPU can, for instance, integrate measures for ensuring effective electronic records management in performance indicators.

The National Institute of Public Administration (INTAN) will be another key partner. INTAN is Malaysia's premier training centre for civil servants, and it will, through its course programmes, have a significant role to play in creating new awareness of the policies, management and implementation issues that must be addressed in managing the records created in the process of electronic government. The National Archives can develop a new level of partnership with INTAN aimed at extending awareness of the requirement to manage electronic records across government and at integrating this awareness in management training.

With support from the National Archives, MAMPU and INTAN, heads of departments will have a better understanding of the need to support education and

training for records managers and record keepers and will be more likely to support external and in-house capacity building in this area. This in turn will contribute to empowering records managers and record keepers to perform their new roles pertaining to the management of electronic records across the Federal Government.

Successful implementation of the model also involves enhancing the role and the status of records keepers in government. Unless records professionals command respect and are able to exert influence, they will not be in a position to introduce the model. Again, the support of MAMPU and INTAN is vital to enhancing the status of the records profession. As records managers begin to play a recognised role in Ministries and departments, they will be able to define and help to implement records management frameworks that have a real impact on government operations. As they make a greater impact, the respect that they command will continue to grow.

It is not an easy task to penetrate the existing patterns, routines and standardised norms of the government staff education. It is this reason that it is so essential that there should be good communication and cooperation between the National Archives, MAMPU and INTAN. The senior staff of the National Archives, who are well aware of these issues, will have an important role to play in influencing their management. New graduates of professional education programmes, for instance from Universiti Teknologi MARA (UiTM), will have an increasing impact on the professional direction of the National Archives.

5.1.2 *Implications for policymakers*

In the centralised system of administration in Malaysia, almost every decision related to any aspect of records management, including that of education and training of the record keepers in the Federal Ministries, is determined and orchestrated by the policymakers at the Prime Minister's Department (MAMPU). Since they are in a position to decide and enact policies, it is important that they understand education and training needs of record keepers, record keepers' professional and intellectual needs pertaining to electronic records management and the importance of record keepers' professional development. It is also important that the Prime Minister's

Department realises the needs of the record keepers and it focuses its attention on facilitating and building the infrastructure needed for local capacity building and sustenance by adopting the vocational and professional education and training model developed in this study.

Some ways in which the policymakers could effect changes and ensure successful implementation of vocational and professional education and training programmes on electronic records management at the Ministry level and help develop a more effective approach are described below.

5.1.2.1 *Shift from passing mandates to actual capacity building. This may enable empowerment and commitment of the top-level management to education and training on electronic records management.*

In the Malaysian context, where the management of education is highly centralised, one of the steps to improve records managers' role in electronic records management would be to decentralise the professional development activities. Currently, all the decisions with regards to staff in service education and training are decided by the Public Services Department under the Prime Minister's Department. Decisions regarding education and training of the archivists and records managers are passed down to the National Archives of Malaysia, while education and training for the administrators and IT personnel are directly conducted by INTAN. This approach has not in the past been flexible enough to support the integrated approach to records management that is required to meet the needs of the various departments and agencies. When the record keepers are not involved in the planning and decision-making processes, the policies are not effective because they are not rooted in professional good practice. Similarly records managers need to work closely with administrators to be sure that the agency's needs are addressed. Otherwise the approach to managing the records may be too theoretical to work well.

Research in the USA has vividly shown that changes or reforms have failed again and again when they failed to take into consideration the views, ideas and input of all the key players or stakeholders in putting the new ideas into practice (Cuban, 1990).

Therefore, the policy makers need to recognise the role that the record keepers can and should play at the implementation level and give them support in building strong records management systems (Shulman, 1987). The records professionals need to recognise that they must understand the policy makers' concerns. They must ensure that records management supports the work of the policy makers.

McDonnel & Elmore (1987) have suggested capacity building of an organisation as one of the alternative instruments which may bring about the changes in the key players. Capacity building through adoption of the model developed in this study is a long-term endeavor that will enable and empower the record professionals to increase their knowledge, skills and commitment to professional values in electronic records management. Under the capacity building approach, the central agency such as the Public Services Department (Prime Minister's Department) may act as the agency for transferring money and other resources to INTAN and the National Archives to support the development of the material, intellectual, or human resources pertaining to education and training of the record keepers relating to the use of this model. This will allow the educators in electronic records management to plan the education and training that will best support the record keepers in the Federal Ministries. In this way the record keepers will become more empowered and take charge of the development process at the various levels as suggested by the focus group discussions.

5.1.2.2 *Acknowledge the need for record keepers education and training in ERM.*
It is not sufficient that policy makers only produce directives on education and training of the record keepers in electronic records; as suggested by the focus group discussion they should look into how the actual implementers of electronic systems can best learn and understand electronic records management.

Currently, the Public Services Department and MAMPU are working under the assumption that by increasing the number or records managers and record keepers who are trained and educated, they will be able to address the management of

electronic records. In this case the in-service education and training is a simplistic solution to a huge issue. The generic model of vocational and professional education and training in ERM, particularly the curriculum developed in this study, emphasises building partnerships among the different stakeholders, including administrators, archivists, IT personnel and records managers. It recommends that they should learn ERM under education and training programmes that share a common approaches and where appropriate common elements. The National Archives and INTAN should adopt the model whereby there is an exchange of views between stakeholders and records managers, who have common concerns in managing electronic records. Ideas need to be shared, and the different groups involved should be encouraged to observe each others' practices and learn about each others' needs as suggested by the model. In this way, through the use of the curriculum in the proposed model, record keepers will be able to learn through collegial interaction and collaborative practices. In such an environment, record keepers themselves become the object as well as the subject of learning. They should be motivated to participate as they see their common problems in managing electronic records and jointly seek solutions through cooperative learning and professional discussions. This can take place through studying a curriculum with common elements and coordinating the learning elements in different courses aimed at learners at different levels, for instance support staff or managers, who do not follow a full professional education but whose training incorporates an element of professional training.

5.1.2.3 *Develop the infrastructure for record keepers' education and training in ERM*

Sykes et al. (1997) define infrastructure as the full set of organisations, institutions, and conditions that can be made available to support learning programmes and activities. In the leading advocates of ERM such as Australia, Canada, European member states, U.K and the USA, one of the important infrastructural elements is the existence of professional records, archives and related information professional organisations. For example in the USA, there are Association of Records Managers and Administrators (ARMA), Society of American Archivists (SAA), National Association of Government Archivists and Records Administrators (NAGARA),

Association for Information and Image Management (AIIM), American Society for Information Sciences (ASIS), Nuclear Information and Records Management Association (NIRMA), American Health Information Management Association (AHIMA) and so on. In the U.K there are the Society of Archivists (SoA), the Records Management Society (RMS) and the Association of Commonwealth Archivists and Records Managers (ACARM) and the International Records Management Trust (IRMT). These organisations are non-governmental, represent the voice and professional views of record keepers, sponsor record keepers education and training, develop and set standards for record keepers learning. Through such professional associations, the model developed in this thesis can be adopted and used for education and training of their respective members. Sykes et al. (1997) suggest that once such associations become active, enjoy a strong membership and begin to shape the professional identity and commitments of their members, then governments may collaborate with them in a variety of ways to support record keepers education and training. This would be a valuable approach in Malaysia.

Even though professional associations of records and archives do not now exist in Malaysia to provide support for the use of this model, this can be done through the e-SPARK project – the ERM project developed by the National Archives of Malaysia. This project was developed to define a strategic plan for an electronic records programme for the government of Malaysia and to develop the initial building blocks of the programme. The project was launched in 2003 and is to be concluded and implemented in 2008. One of the findings of the e-SPARK project survey of the Federal Ministries were that firstly, the staff in the Federal agencies and in the National Archives have yet to acquire the skills, knowledge and abilities required to undertake the job of managing electronic records; secondly, the awareness and understanding of the importance of electronic records among public servants is lacking thus hindering efforts to promulgate ERM strategies (McDonald, 2003). Thus through the e-SPARK project, the generic model for vocational and professional education and training in ERM for all levels of record keepers in the Federal Ministries is indeed appropriate and timely.

To get the model across to the National Archives directly, a short proposal or report of what the National Archives could do with the generic model was prepared by the Faculty of Information Management, UiTM. The Faculty met on the 3rd of October 2005 at the National Archives, and the findings of the study were brought to the attention of the Director General of the National Archives. The Archives was receptive to the idea as the National Archives and the Ministry of Arts, Culture and Heritage are planning to develop a National Heritage Academy. The agenda for the next meeting will include the presentation of the research findings and the usefulness of the model to the National Archives. A similar proposal will be submitted to INTAN through the National Archives. Through the National Archives and INTAN, it is hoped that the Federal Government of Malaysia will be well informed of the need for education and training in ERM for the record keepers defined in this study. As revealed by the Malaysian Focus Group participants in this study, the success of ERM depends on high-level support.

Being the Secretariat of Southeast Asian Regional Branch of the International Council on Archives (SARBICA), the National Archives of Malaysia is able to disseminate the findings of the study and the generic model at SARBICA project meetings. The model could be used by the SARBICA member countries to introduce education and training programmes in ERM for their respective record keepers.

In Malaysia as in any other parts of the world, another way of introducing the model is by ERM courses either at the university level or as short courses from time to time at which the model will be introduced, discussed and promulgated. The most appropriate way to disseminate the model is through its implementation by the Faculty of Information Management, UiTM. As a senior lecturer who is in charge of the Records Management programmes at the Faculty, the writer will use the generic model elements in the next curriculum review due in June 2006. The ERM curriculum will also be used to develop training programmes in the form of short courses for the government employees. Short courses would be aimed at in-the-job

training, while the UiTM's education would aim to produce qualified records professionals in ERM. The findings of the study will also be raised within the UiTM's management team and members of other faculties especially that of the Faculty of Office Management and the Faculty of Business Administration to promote awareness on the importance of ERM within the whole institution. In this case the UiTM's Records Centre will get involve in the training of records practitioners across UiTM in collaboration with the Faculty of Information Management.

The introduction of records management programmes in private universities is a recent development in Malaysia. Private universities such as University of Selangor Darul Ehsan (UNISEL) and the Industrial University of Selangor have recently developed curriculum for library management programmes with several records management courses. Since the writer is responsible for developing records management curriculum for UNISEL, this is another possible way to disseminate the model through offering ERM courses within the library management programmes and periodical short courses at which the model could be used as a basis for an ERM vocational and professional educational and training curriculum.

Although education and training is an effective means for disseminating the generic model, there are some other avenues for sharing it, such as establishing discussion groups, seminars and workshops with two other universities offering records management in their library management programmes, namely University of Malaya and Universiti Kebangsaan Malaysia will be organised. Through the discussion groups seminars or workshops the findings of this study will be conveyed to both universities so that ERM could be included in their curriculum in the near future based on the model.

For the Malaysian audience, publication of the findings of this study in the national journals such as the Malaysian Journal of Library and Information Science and the Malaysian Journal of Information and Knowledge Management is required. This is

another way of alerting the records, archives and information management communities in Malaysia to the availability of a model for vocational and professional of education and training in ERM to be utilised at the national level.

5.2 The Global Context

5.2.1 *Professional organisations*

In the global context, professional organisations should provide an avenue for professional advice and knowledge, not only in Malaysia but in other developing countries. This could be done through an extension of the Management of Public Sector Records (MPSR), which is available without charge to developing countries. This package of capacity building material was developed by the International Records Management Trust in cooperation with the International Council on Archives with financial support from the UK Department for International Development and the United Nations Development Programme. The generic model for vocational and professional education and training in ERM for record keepers fits into one of the objectives of the MPSR, which is to raise awareness and provide understanding of the strategic importance of records management and the need for records management including that of ERM planning amongst government officials at all levels. Since the MPSR project is geared to improving organisational competence and fostering greater professional development of civil service administrators and others who are in charge of records and information, the generic model education and training in ERM developed in this study is an appropriate element to be incorporated into the MPSR modules.

One of the focuses of the MPSR is the need to build upon and develop existing structures to empower national archives administrators and their staff to take a major role in planning and managing government information and records system which are increasingly electronically based. The activities of the project have included the preparation of education and training modules, documentary training videos, and case-studies and procedures manuals. The project has formulated a professional enhancement package in order to establish mechanisms for distributing and delivering

professional development tools, and presenting awareness seminars on electronic records management. The Trust has also been involved in a Global From sponsored by the World Bank to continue building awareness of the need to manage electronic records. The model especially the curriculum content will make a particularly valuable contribution in the areas of education and training on ERM for the developing countries. Thus ICA and IRMT could assist in promoting and encouraging the use of the model, as it allows for a curriculum to be formulated based on the best possibilities for a number of smart partnerships among the international archival communities.

5.2.2 *Academic institutions*

The generic model for vocational and professional education and training in ERM also provides the basis for action by academic institutions in the area of ERM. Academic institutions worldwide will be able to explore and use the generic model as a guideline for developing their educational and training programmes, not only in ERM but also in other disciplines such as library and information management, education, health science, economics, marketing etc. In this case the generic elements or dimensions of the "Context/Driver", "Target to be educated and trained" and "Fulfilling the need for education and training" can be used to explore and identify the required knowledge and skills in various other areas of specialisation mentioned above by carrying out case studies adopting similar methodology.

5.2.3 *Publications*

Publication in the international journals provides yet another way to alert the international records and archival community about the availability of the model – both academic and professional such as the Information Management Journal, Records Management Journal and the COMMA International Journal on Archives.

Through these journals, the writer hopes that the generic model developed in this study will be made available to the records and archival communities world wide to be used within their own environments. In this case, the archival institutions and

similar organisations could use the generic model for vocational and professional education and training in ERM as the foundation for education and training opportunities to existing staff and expand their educational and training programmes by adopting the curricula proposed in this model to help improve their knowledge and skills in ERM. Hopefully, this will enhance the level of professionalism as the curriculum is the result of in-depth examination of education and training concepts, as well as concepts underpinning the international education and training programmes in ERM for the record keepers.

6. Suggestions for further research

This research is limited in scope such as in its settings, types of data collected and limited involvement of the policy makers.

6.1 The research design relies on a case study of the Malaysian Federal Government, as there was limited participation by record keepers in the State Governments. The cases in this study were selected from the Malaysian Federal Government organisational settings. It would be interesting to select other cases from the State Government agencies in Malaysia to identify the roles and responsibilities of the different record keepers, to investigate the situation in which the different record keepers manage electronic records and to identify whether the different record keepers have received adequate education and training in ERM. This is proposed because there is a fundamental difference between the Federal Government departments and the State Government departments. The state departments are answerable to the Sultan (King of the State) or Governor or the State Chief Secretary (SUK). The responsibility for transparency and coordination is structured differently from the Federal Government departments. The Federal Government departments are answerable to the reigning Monarch at the Federal level (Yang DiPertuan Agong) in whose names all Federal Government officers and officers are appointed. A Federal Cabinet headed by the Prime Minister is responsible for streamlining the activities of the Federal Government departments and ensuring standardised practices and procedures are in place. MAMPU is largely responsible and answerable for issues

such as coordination of records management programmes for Federal Government departments as a whole, in line with the EG linked objectives of the Federal administration. Since the administrative structure of the Sate Government differs from that of the Federal Government, it is recommended that any future research should involve the participation of record keepers from State Government departments.

6.2 Much of the data was collected through surveys, interviews and focus group discussions. It would be helpful if some other studies can be designed in such a manner that more time can be spent in observations and explore the record keepers' ERM practices in detail. More data based on observations could provide us with insights about the practical aspects of the record keepers work in the various Federal Ministries.

6.3 Very little data was obtained from policy makers. Much of the data came from record keepers. Since the findings from the focus group discussions point to the importance of partnerships between policy makers from policy making Ministries and departments (the Prime Minister's Department - MAMPU and Public Services Department and the Ministry of Finance -Treasury) with the National Archives, it would be interesting to gather data from the policy makers and find out what their perspectives may be with regards to record keepers' education and training in ERM and professional development. This should be helpful in understanding the policymakers' thinking and reasons for their actions and decisions they make pertaining to education and training in ERM in the Federal Ministries. This may also help in putting the pieces to gather from all three levels – policy, administration, and practice – and see the similarities and differences and understand the complications behind the policy alignment issue.

6.4 As an extension from this study, there is a possibility of carrying out more research related to ERM in the private sectors. This study illustrates the need by record keepers need for education and/or training in ERM in the Federal Ministries

and the National Archives of Malaysia. Future research could follow a similar pattern of investigation of the private sector. This would contribute to the study of ERM programmes nation-wide.

6.5 As a further extension of this study, there is a possibility of using the generic model for vocational and professional education and training in ERM that has been developed in this study as a point of reference in other countries. They can start by looking into the possibilities of formulating curriculum contents for ERM courses and modules in the different institutions for the different levels of knowledge and skills required by the different level of record keepers in the respective governments. The curriculum contents can also be used as a foundation for partnership building with the ICT industries.

This study has provided the first ever case study of education and training in ERM in Malaysia and the first ever attempt to create a model to address the issues pertaining to knowledge and skills of the record keepers in the area of electronic records. It provides a conceptual foundation for future study in the area of education and training in ERM and at the same time serves as a framework for reference for record keepers worldwide to acquire knowledge and skills needed to manage electronic records.

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Appendix 1

Questionnaire used in the survey of professional associations in Phase 1 of the study

Survey of professional associations of records, archives, administrators, information management and information technology on education and training of record keepers in managing electronic records

Welcome to the Education and Training of Record Keepers survey. I am researching education and training of record keepers, with particular emphasis on electronic records management as part of my PhD research studies. Record keepers refers to "administrators, records managers, archivists and IT personnel". E-records refers to "electronic records/archives". My research focuses specifically on identifying the international best practice models and interest on education and training of record keepers in managing electronic records. Your organisation is one of the respondent for my research studies. Please proceed with the survey now and answer the questions, which would take approximately less than 30 minutes. Please reply by 28 February 2002. If you would like a full copy of the research findings, available by mid-2002, please contact me via email rusnah.johare@unn.ac.uk

**All responses will be treated in total confidence

Thank you very much for your participation.

Rusnah Johare,
PhD Student,
School of Information Studies,
University of Northumbria at Newcastle,
England.

Instructions

Answer questions as they relate to you. For most answers, click the box(es) most applicable to you or fill in the blanks.

General Information

1. Which area/aspect does your professional association cover? Please type the respective number or numbers for your answer in the box provided

1= Records
2= Archives
3= Administrators
4= Information management
5= Information technology

2.Is your organisation involved in the education and training of record keepers in managing electronic records? ○ Y ○ N (Skip to Q.7)

3.If yes, who provides the training?

4.If yes, what is the content of the training programme? Please describe and attach course outlines and documentation.

5.If yes, what types of staff participate in the training programmes? Please type the respective number or numbers for your answer in the box provided

1= Records managers
2= Archivists
3= Administrators
4= IT personnel
5= Other

6.If you selected 'Other', please specify by clicking in the box and typing your answer

7.Does your organisation have a policy regarding the provision of education and training programme support for administrators, records managers, archivists and IT personnel to manage e-records? ○ Y ○ N (Skip to Q.9)

8.If yes, please briefly describe the policy

9.Has any standard or benchmark on education and training of record keepers to manage e-records been adopted by your organisation? ○ Y ○ N (Skip to Q.11)

10.If yes, please describe

11.Is there any guide produced by your organisation on e-record keeping for record keepers? ○ Y ○ N (Skip to Q.13)

12. If yes, please briefly describe or attach

Provision for education and training

13.Is there any existing education and training approach e.g. induction, customised programmes, general seminars, distance learning or accredited programmes used by your organisation for educating and training administrators, records managers, archivists and IT personnel together to manage e-records? ○ Y ○ N (Skip to Q.15)

14.If yes, please briefly describe

Partnership in provision for education and training

15.Is your organisation involved in supporting universities' tertiary programmes for record keepers in e-record management? ○ Y ○ N (Skip to Q.17)

16.If yes, please briefly describe which universities are involved and how?

17.Does your organisation work co-operatively with other existing professional organisations on the education and training of record keepers in managing e-records? ○ Y ○ N (Skip to Q.19)

18.If yes, please briefly describe the professional organisations and how?

19.Does your organisation work co-operatively with the National Archives of your country on the education and training of record keepers in managing e-records? ○ Y ○ N (Skip to Q.21)

20.If yes, please describe

21.Do you have access to people, either within or outside your organisation, whom you regard as experts in some areas of education and training of e-records management? ○ Y ○ N

22.If yes, who are they?

Issues and views

23.Is your organisation involved in other e-records management strategies? ○ Y ○ N (Skip to Q.25)

24.If yes, please describe

25.What do you see as the main issues your professional organisation faces or will face related to education and training of record keepers in managing e-records?

26.From your perspective, how best should education and training of record keepers in managing e-records be provided?

27.Are they any general comments you wish to make about education and training for

record keepers in managing e-records?

Thank you for your co-operation in completing this survey

Submit Your Responses

Reset All Responses

Any enquiries: rusnah.johare@unn.ac.uk

Appendix 2

Questionnaire used in the survey of national governments in Phase 1 of the study

Survey of national governments on best practice models and interest in education and training of record keepers in managing electronic records

Welcome to the Education and Training of Record Keepers survey. I am researching education and training of record keepers, with particular emphasis on electronic records management as part of my PhD research studies. Record keepers refers to "'administrators, records managers, archivists and IT personnel". E-records refers to "electronic records/archives". My research focuses specifically on identifying the international best practice models and interest on education and training of record keepers in managing electronic records. Your organisation is one of the respondent for my research studies. Please proceed with the survey now and answer the questions, which would take approximately less than 30 minutes. Please reply by 28 February 2002. If you would like a full copy of the research findings, available by mid-2002, please contact me via email rusnah.johare@unn.ac.uk

**All responses will be treated in total confidence

Thank you very much for your participation.

Rusnah Johare,
PhD Student,
School of Information Studies,
University of Northumbria at Newcastle,
England.

Instructions

Answer questions as they relate to you. For most answers, click the box(es) most applicable to you or fill in the blanks.

Personal Information

1. The name of your organisation
2. Your name
3. Your job title
4. The department in which you work

General information

5. Does your archives hold e-records? ○ Y ○ N (Skip to Q.7)

6. If yes, for how long? _____

7. Do your organisation's records managers have any responsibility for control over e-records in the active stage? ○ Y ○ N (Skip to Q.9)

8. If yes, please describe

9. Do your organisation's archivists have any responsibility for control over e-records in the active stage? ○ Y ○ N (Skip to Q.11)

10. If yes, please describe

11. Do your organisation's administrators have any responsibility for control over e-records in the active stage? ○ Y ○ N (Skip to Q.13)

12. If yes, please describe

13. Do your organisation's IT personnel have any responsibility for control over e-records in the active stage? ○ Y ○ N (Skip to Q.15)

14. If yes, please describe

15. Do the record keepers possess adequate knowledge of IT to manage e-records? ○ Y ○ N

16. If yes, please describe how they acquired the knowledge, if no, what is lacking?

17. Does your organisation employ IT personnel to be in charge of the management of e-records? ○ Y ○ N (Skip to Q.19)

18. If yes, please describe how they acquire the knowledge and skills to manage e-records

Provision for education and training

19. Has your organisation developed any new awareness or training programmes/opportunities related to the management of e-records within the National Archives? ○ Y ○ N (Skip to Q.31)

20. If yes, who participates in the new training? Please type the respective number or numbers for your answer in the box provided

1= New staff
2= Junior staff
3= Senior staff
4= Records managers
5= Archivists
6= Administrators
7= IT personnel
8= Other

21. If you selected 'Other', please specify

22. Who provides the training for the new staff?

23. Who provides the training for the junior staff?

24. Who provides the training for the senior staff?

25.Who provides the training for the records managers?

26.Who provides the training for the archivists?

27.Who provides the training for the administrators?

28.Who provides the training for the IT personnel?

29.Who provides the training for the 'other'?

30.If yes, what does the new training entail? Please describe or attach course outlines or documentation.

31.Do you think the training provision for the records managers is adequate in relation to the management of e-records? ○ Y ○ N

32. Give reasons why

33. Do you think the training provision for the archivists is adequate in relation to the management of e-records? ○ Y ○ N

34.Give reasons why

35.Do you think the training provision for the administrators is adequate in relation to the management of e-records? ○ Y ○ N

36.Give reasons why

37.Do you think the training provision for the IT personnel is adequate in relation to the management of e-records? ○ Y ○ N

38.Give reasons why

Education and training role for government departments

39. Does your organisation have a policy regarding the provision of education and training programme support for administrators, records managers, archivists and IT personnel to manage e-records in the government agencies of your country? ○ Y (Skip to Q. 40) ○ N (Skip to Q. 4

40.If yes, please briefly describe the policy or if possible provide a copy

41.If no, are there any plans to introduce one or give reasons for not having one

42.Is there any standard or benchmark on education and training of record keepers to manage e-records for government agencies or your organisation? ○ Y ○ N (Skip to Q. 44)

43.If yes, please describe

44.Are there any guides produced by your organisation on e-record keeping for record keepers? ○ Y ○ N (Skip to Q. 46)

45. If yes, please describe or provide a copy

46.Is an education and training model used by your organisation or government agencies in educating and training administrators, records managers, archivists and IT personnel together to manage e-records? ○ Y ○ N (Skip to Q. 48)

47.If yes, please describe or provide a copy

Partnership in provision for education and training

48.Is your organisation involved in supporting universities' tertiary programmes for record keepers in e-records management? ○ Y ○ N (Skip to Q. 50)

49.If yes, please describe

50.Does your organisation work co-operatively with existing professional organisations of administrators, records, archives, information management, information technology on education and training of record keepers in managing e-records? ○ Y ○ N (Skip to Q. 52)

51.If yes, please describe

52.Do you have access to people, either within or outside your organisation, whom you regard as experts in some areas of education and training of e-records management? ○ Y ○ N (Skip to Q. 54)

53.If yes, please describe

Issues and views

54.What do you see as the main issues your organisation faces or will face related to education and training of record keepers in managing electronic records?

55.Are there any general comments you wish to make about education and training for record keepers in managing e-records?

56. Are there any other e-records management strategies that your organisation is involved in? ○ Y ○ N (Skip to Q. 58)

57.If yes, please describe

58.Would you like to participate further in this survey? ○ Y (Skip to Q. 59) ○ N

59.If yes, please provide your email address

Thank you for your co-operation in completing this survey

Submit Your Response

Reset All Responses

Any enquiries: rusnah.johare@unn.ac.uk

Appendix 3

Main area of focus for the interview questions for those who were involved in education and training programmes in ERM who participated in Phase 2 of the study

Main area of focus for the interview questions for the training officers who were involved in education and training programmes in ERM:

1. Could you explain your involvement in the education and training programmes in ERM?
2. Could you explain the nature of the programmes?
3. Who were the target groups of the programmes and their levels?
4. Other then methods of delivery such as face to face classroom, were there other pedagogic approaches used in delivering the programmes such as coaching, mentoring and practical hands on?
5. In the content delivery, do you think there were appropriate balance of knowledge and skills conveyed to the students or participants?
6. What were the education and training concepts underpinning the various programmes?
7. Could you explain the learning outcomes of the various programmes?
8. Could you explain about the response from the target groups, as one of the aim and objective of the programmes is to build partnership among the key players? (Were there fair combinations of the target groups attending the programmes so far – if not why this happened?).
9. Could you explain why the records management NVQ in the U.K was dropped? Could you explain further the overall situation leading to the decision?
10. In your experience, do you think records management is more established in the private companies rather than in the public sector? (If so, please explain).
11. The rm3, e-TERM and the IMU programmes have been delivered for several years now, could you explain about the feed back or evaluation from the participants?
12. As one of the consultants of the pragmatic examples programmes, could you comment on the strength and weaknesses of the programmes? (What need to be done further to strengthen these programmes?)
13. Is there any comment that you would like to make on the issues of education and training on ERM?

Appendix 4

Questionnaire used in the survey of the Malaysian Federal Ministry in Phase 4 of the study

Survey of education and training of record keepers in the context of electronic records management in the Malaysian government

Welcome to the Education and Training of Record Keepers survey. I am researching the education and training of record keepers, with particular emphasis on electronic records management as part of my PhD research study. Record keepers refers to "administrators, record managers, archivists and IT personnel". E-records refers to "electronic records/archives". My research focuses specifically on a.) current practice in e-record keeping and b.) identifying the need for education and training of record keepers to support the Electronic Government (EG) programme. The research study has been approved by the Economic Planning Unit (EPU) through an official letter UPE: 40/200/19 SJ.946 dated 20th June 2002. The National Archives of Malaysia is one of the samples for my research study. Please proceed with the survey now and answer the questions, which would take less than 30 minutes. Please reply by 10th January 2003. If you would like a full copy of the research findings, available by mid-2004, please contact me via email r.johare@unn.ac.uk

**All responses will be treated in total confidence

Thank you very much for your participation.

Rusnah Johare,
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United Kingdom

Instructions
Answer questions as they relate to you. For most answers, tick the box(es) most applicable to you or fill in the blanks.

Section 1. Information about respondent

1. Name of your Ministry: _____

2. The department in which you work: _____

3. Your job title (Choose one only):

   ☐ Administrator

☐ Records Officer/Manager

☐ IT personnel

Section 2. Types of e-records, storage, location and responsibilities

4. Does your Ministry hold records/documents in electronic form?

☐ Yes ☐ No

5. If YES to 4, do they contain any of the following?

☐ Policy records

☐ Accounting/financial records

☐ Project management records

☐ Legal records

☐ Procurement records

☐ Agreement

☐ Personnel records

☐ Circulars and directives

☐ Correspondence

☐ Lists and inventories

☐ Blueprints and plans

☐ Minutes and supporting papers

☐ Property records

☐ Publications of the Ministry

☐ Maps and plans

☐ Other (Please specify):_____

6. If YES to 4, on which medium are these e-records stored?

- ☐ Hard disk
- ☐ Floppy disks/diskettes
- ☐ Magnetic tapes
- ☐ Optical disks
- ☐ Other (Please secify):_____

7. If YES to 4, are the e-records kept

a) in the organization records centre? Yes ☐ No ☐

b) in the organization IT department? Yes ☐ No ☐

c) in one of the administrative departments? Yes ☐ No ☐

d) if YES to 7c, in which department? _____

e) in a number of scattered locations? Yes ☐ No ☐

f) in one location not covered by 7 a-e Yes ☐ No ☐

g) if YES to 7f, where? _____

8. If YES to 4, are these e-records looked after by yourself?

Yes ☐ No ☐

9. If NO to 8, by whom? _____

Section 3. Education and training

10. If YES to 8, did you receive any education and/or training to manage e-records in your custody?

Yes ☐ No ☐

11. If YES to10, what kind of education and/or training have you received?

a) Workshops Yes ☐ No ☐

b) Seminars Yes ☐ No ☐

c) Conferences Yes ☐ No ☐

d) Distance learning Yes ☐ No ☐

e) Customised programmes Yes ☐ No ☐

f) Induction Yes ☐ No ☐

g) Accredited programmes Yes ☐ No ☐

h) Others (Please specify):_____

12. If YES to 10 and any of 11, does this education and/or training give you sufficient knowledge and skills to manage e-records in your custody?

Yes ☐ No ☐

13. If NO to 8, what education and/or training has the person in charge of the e-records received? _____

Section 4. Guidance on e-records

14. If YES to 4, is general oversight of the e-records exercised by:

a) organisation Records Committee Yes ☐ No ☐

b) organisation Electronic Records Committee Yes ☐ No ☐

c) organization Information Management Committee Yes ☐ No ☐

d) organistaion IT Committee Yes ☐ No ☐

e) archivists from the National Archives Yes ☐ No ☐

f) some other organizations Yes ☐ No ☐

g) if YES to 14f, by whom?_____

15. If YES to any 8 or 14, is there any written advice issued to departments in your Ministry pertaining to the management of e-records?

a) by the Ministry's records officer/manager Yes ☐ No ☐

b) by the archivists from National Archives Yes ☐ No ☐

c) by the Ministry's administrator Yes ☐ No ☐

d) by the Ministry's IT personnel Yes ☐ No ☐

e) by some other officer of the Ministry Yes ☐ No ☐

f) if Yes to 15e, by whom? _____

16. If YES to 15, does this advice take the form of:

a) an official general circular letters Yes ☐ No ☐

b) Ministerial directives Yes ☐ No ☐

c) departmental directives Yes ☐ No ☐

d) directives from the Treasury Yes ☐ No ☐

e) guidelines from the National Archives Yes ☐ No ☐

f) published handbook Yes ☐ No ☐

g) brochure or leaflet Yes ☐ No ☐

h) Other (Please specify):_____

17. If YES to any of 16, does the advice include guidance about:

a) identification of e-records with continuing value Yes ☐ No ☐

b) creation of e-records Yes ☐ No ☐

c) naming convention Yes ☐ No ☐

d) metadata Yes ☐ No ☐

e) appraisal of e-records Yes ☐ No ☐

f) retention of e-records Yes ☐ No ☐

g) disposal of e-records Yes ☐ No ☐

h) conversion Yes ☐ No ☐

i) migration Yes ☐ No ☐

j) preservation of e-records Yes ☐ No ☐

k) transfer of e-records to the National Archives Yes ☐ No ☐

l) preparing ERM programmes Yes ☐ No ☐

m) establishing link with archivists in the National Archives. Yes ☐ No ☐

18. Are you responsible for actually carrying out the Practices mentioned in 17? Yes ☐ No ☐

19. If YES to 18, which practices?

17a Yes ☐ No ☐

17b Yes ☐ No ☐

17c Yes ☐ No ☐

17d Yes ☐ No ☐

17e Yes ☐ No ☐

17f Yes ☐ No ☐

17g Yes ☐ No ☐

17h Yes ☐ No ☐

17i Yes ☐ No ☐

17j Yes ☐ No ☐

17k Yes ☐ No ☐

17l Yes ☐ No ☐

17m Yes ☐ No ☐

Other (Please specify):_____

20. Are non-current e-records generally transferred to the National Archives when they are 20 years old?

Yes ☐ No ☐

Section 5. Issues and views

21. Have you any general comments or views on the issues of e-record keeping and education and/or training of record keepers in the context of EG programmes?

Yes ☐ No ☐

22. If YES to 21, please give your comments and views.

_____

_____

_____

_____

23. Would you be willing to participate further in this survey?

Yes ☐ No ☐

24. If YES to 23, please provide your e-mail address._____

Thank you for your co-operation in completing this survey.
Any enquiries contact: r.johare@unn.ac.uk

Appendix 5

Questionnaire used in the survey of the National Archives of Malaysia in Phase 4 of the study

Survey of education and training of record keepers in the context of electronic records management in the Malaysian government

Welcome to the Education and Training of Record Keepers survey. I am researching the education and training of record keepers, with particular emphasis on electronic records management as part of my PhD research study. Record keepers refers to "administrators, record managers, archivists and IT personnel". E-records refers to "electronic records/archives". My research focuses specifically on a.) current practice in e-record keeping and b.) identifying the need for education and training of record keepers to support the Electronic Government (EG) programme. The research study has been approved by the Economic Planning Unit (EPU) through an official letter UPE: 40/200/19 SJ.946 dated 20th June 2002. The National Archives of Malaysia is one of the samples for my research study. Please proceed with the survey now and answer the questions, which would take less than 30 minutes. Please reply by 10th January 2003. If you would like a full copy of the research findings, available by mid-2004, please contact me via email r.johare@unn.ac.uk

**All responses will be treated in total confidence

Thank you very much for your participation.

Rusnah Johare,
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NE1 8ST
England,
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Instructions
Answer questions as they relate to you. For most answers, tick the box(es) most applicable to you or fill in the blanks.

Section 1. Information about respondent

1. Name of your Department: National Archives of Malaysia

2. The Division/Branch in which you work: _____

3. Your job title at the Division/Branch you are attached to: _____
   _____

4. How long you have been working with the Archives?:_____

5. Briefly explain the nature of your present job:_____
_____
_____
_____
_____
_____

6. What is your prime responsibility?

☐ Managing paper records

☐ Managing e-records

☐ Managing paper and e-records

☐ Managing other types of records: (Please specify the types)
_____

7. Are you involved in advising the Federal Government agencies in managing their electronic records?

☐ Yes ☐ No

8. If YES to 7, how do you carry out the task?

a. periodic visits to the agencies ☐ Yes No ☐

b. issuing guidelines to the agencies ☐ Yes No ☐

c. assisting in appraisal of e-records ☐ Yes No ☐

d. assisting in the migration of e-records ☐ Yes No ☐

e. assisting in the preservation of e-records ☐ Yes No ☐

f. assisting in establishing e-records management programmes ☐ Yes No ☐

g. meeting with the agencies IT personnel ☐ Yes No ☐

h. meeting with the agencies administrators ☐ Yes No ☐

i. meeting with the agencies records managers ☐ Yes No ☐

j. giving training ☐ Yes No ☐

k. Other: (Please specify)_____

9. Are you in any way involved in the government wide EG project?

☐ Yes No ☐

10. If YES to 9, please explain briefly_____

_____

_____

Section 2: Types of e-records, storage, location and responsibilities

11. Does your Department hold records/documents in electronic form?

☐ Yes No ☐

12. If YES to 11, which of the following do they include?

a. The National Archives' own administrative records:

☐ Policy records

☐ Accounting and financial records

☐ Project management records

☐ Legal records

☐ Procurement records

☐ Agreements

☐ Personnel records

☐ Circulars and directives

☐ Correspondence

☐ Lists and inventories

☐ Blueprints and plans

☐ Minutes and supporting papers

☐ Property records

☐ Publications of the Department

☐ Maps and plans

Other: (Please specify)_____

b. Records of the Federal Ministries, departments and agencies of archival value which are preserved in the National Archives for posterity

☐ Policy records

☐ Accounting and financial records

☐ Agreements

☐ Legal records

☐ Personnel records

☐ Circulars and directives

☐ Correspondence

☐ Blue prints and plans

☐ Property records

☐ Publications of the agencies

☐ Maps and plans

☐ Audio visual records

☐ Digital films archives

☐ Digital photographs

☐ Finding aids to the records in custody

☐ Other: (Please specify)_____

13. a. If YES to 12a, on which medium are these e-records stored?

- ☐ Hard disk
- ☐ Floppy Disks
- ☐ Magnetic tapes
- ☐ Optical disks
- ☐ Compact disks
- ☐ Other: _____

b. Where are the e-records kept?

- ☐ National Archives Records Centre in Petaling Jaya
- ☐ National Archives Records Centre in Jalan Duta
- ☐ National Archives E-Records and IT Division
- ☐ in every administrative unit in a division/branch
- ☐ in a number of scattered locations
- ☐ in the divisions where the records are being created
- ☐ Other: _____

c. If YES to 12b, on which media are these e-records stored or preserved?

- ☐ Magnetic tapes
- ☐ Optical disks
- ☐ Compact disks
- ☐ Digital linear tapes
- ☐ Other: (Please specify)_____

d. Where are these e-records stored?

- ☐ National Archives Records Centre in Petaling Jaya
- ☐ National Archives Records Centre in Jalan Duta
- ☐ National Archives Branch Offices
- ☐ Other: _____

14. a. If YES to 12a, are these e-records looked after by yourself?

☐ Yes ☐ No If NO, by whom?_____

b. If YES to 12b, are these e-records looked after by yourself?

☐ Yes ☐ No If NO, by whom? _____

Section 3. Education and training

15. If YES to 14a or 14b, did you receive any education and training to manage e-records in custody?

☐ Yes ☐ No

16. If YES to 15, what kind of education and training have you received?

a.	workshops	☐	Yes	☐ No
b.	seminars	☐	Yes	☐ No
c.	conferences	☐	Yes	☐ No
d.	distance learning	☐	Yes	☐ No
e.	customised programmes	☐	Yes	☐ No
f.	induction	☐	Yes	☐ No
g.	accredited programmes	☐	Yes	☐ No
h.	others (Please specify)	☐	Yes	☐ No

_____

17.If YES to 16, does this education and training give you sufficient knowledge to manage e-records in your custody?

☐ Yes ☐ No

18.If NO to 14a or 14b, what training has the person in charge of the e-records received? _____

Section 4. Guidance on e-records

19.If YES to 11, is general oversight of the e-records exercised by

a. the National Archives Records Committee?

☐ Yes ☐ No

b. the National Archives Electronic Records Committee?

☐ Yes ☐ No

c. the National Archives Information Management Committee?

☐ Yes ☐ No

d. the National Archives E-records and IT Committee?

☐ Yes ☐ No

e. the archivists from the National Archives E-records and IT Division?

☐ Yes ☐ No

f. some other organisations?

☐ Yes ☐ No

g.If YES to 19f, by whom?

_____

20.If YES to any of 11 or 19, is there any written advice issued to divisions in your organisation pertaining to the management of e-records?

a. by the organisation's Records Officer/Manager Yes ☐ No ☐

b. by the organisation's Archivist Yes ☐ No ☐

c. by the organisation's Administrator Yes ☐ No ☐

d. by the organisation's IT personnel Yes ☐ No ☐

e. by some other officers of the organisation? Yes ☐ No ☐

f. If YES to 20e, by whom? (Please specify)_____

g. Other: (Please specify)_____

21. If YES to 20, does this advice take the form of :

a. an official general circular letters Yes ☐ No ☐

b. ministerial directives Yes ☐ No ☐

c. departmental directives Yes ☐ No ☐

d. directives from the Treasury Yes ☐ No ☐

e. guidelines from the E-records and IT Division Yes ☐ No ☐

f. published handbook Yes ☐ No ☐

g. brochure or leaflet Yes ☐ No ☐

h. Other: (Please specify) Yes ☐ No ☐

_____

22. If YES to any of 21, does the advice include guidance about

a. identification of e-records with continuing value. Yes ☐ No ☐

b. creation of e-records Yes ☐ No ☐

c. appraisal of e-records. Yes ☐ No ☐

d. retention of electronic records. Yes ☐ No ☐

e. disposal of electronic records of no value. Yes ☐ No ☐

f. metadata Yes ☐ No ☐

g. naming convention Yes ☐ No ☐

h. migration of electronic records to a new system. Yes ☐ No ☐

i. preservation of electronic records. Yes ☐ No ☐

j. transfer of electronic records to the records centre Yes ☐ No ☐

k. conversions of paper records to e-record Yes ☐ No ☐

l. to prepare programmes for the management of electronic records. Yes ☐ No ☐

m. to establish link with the archivists at the E-records and IT Division Yes ☐ No ☐

n. Other: (Please specify)_____

23. Are you responsible for actually carrying out of the practices mentioned in 22? Yes ☐ No ☐

24. If YES to 23, which practices?

a. identification of e-records with continuing value Yes ☐ No ☐

b. creation of records Yes ☐ No ☐

c. appraisal of e-records Yes ☐ No ☐

d. retention of e-records Yes ☐ No ☐

e. disposal of e-records without value Yes ☐ No ☐

f. metadata Yes ☐ No ☐

g. naming convention Yes ☐ No ☐

h. migration of e-records to a new system Yes ☐ No ☐

i. preservation of e-records Yes ☐ No ☐

j. transfer of e-records to records centre Yes ☐ No ☐

k. conversions of paper records to e-records Yes ☐ No ☐

l. to prepare programmes for the management of e-records. Yes ☐ No ☐

m. to establish link with the archivists at the e-records and IT Division Yes ☐ No ☐

n. Other: (Please specify)_____

25. Are non-current e-records of archival value of government agencies generally transferred to the Archives?

☐ Yes ☐ No

26. If NO to 25, then what is the practice?

_____

Section 5. Issues and views

27. In your opinion do you think that you will be involved in managing e-records in the future as it relates to the EG programme?

☐ Yes ☐ No

28. If YES to 27, in what way (s) ? Please explain briefly._____

_____

_____

_____

29.If NO to 27, why not? Please give reasons._____

_____

_____

30. Do you think the EG programmes will have an impact on your job in the the future?

☐ Yes ☐ No

31. If YES to 30, in what way (s)? Please explain briefly_____

_____

_____

32. Have you any general comments or views on the issues of electronic records management and education and training of record keepers in the context of EG programme? Please give your comments and views.

_____

_____

_____

_____

_____

33. Would you be willing to participate further in this survey?

☐ Yes ☐ No

34. If YES to 33, please provide your e-mail address.

_____

Thank you for your co-operation in completing this survey
Any enquiries, please contact: r.johare@unn.ac.uk

Appendix 6

Main area of focus for the interview questions for administrator in the Prime Minister's Department (Malaysia) who participated in Phase 4 of the study

Main area of focus for the interview questions for administrator from the Prime Minister's Department:

Section 1: Introduction

1.1 How long have you been working as administrator for this Ministry? Where were you attached before?

1.2 Which category of civil service scheme do you belong to? (A general administrative officer or the diplomatic administrative officer). What is your designation/job title? Please explain your present job in this Ministry.

Section 2: Administrative accountability

2.1 Do you use microcomputers or integrated office automation systems to perform your work? To what extent?

2.2 Who actually uses the microcomputers in your office, e.g. you, special assistants, secretaries, etc.?

2.3 In your own situation, to what uses do you put electronic technology? Please give examples.

2.4 How often do you consult electronic records during decision making process or for other purposes?

2.5 Is managerial decision making and/or policy formulation included in your uses of electronic technology? If not how is it communicated and/or documented?

2.6 Has the use of electronic technology changed the nature of what you consider important to retain? In your electronic records, what do you consider important material for retention? Why, to document governmental process or preserve history? How do you protect it?

2.7 How has the introduction of electronic technology changed the way in which you do business/administrative work?

2.8 What impact has it had on your people? i.e. how are important drafts/memoranda, letters, policy statements, etc., reviewed prior to finalisation? In printed or electronic form?

2.9 For the records you keep at your desk, are these likely to be in paper or electronic format or both?

2.10 At what levels of agency/work force is this type of information being produced?

2.11 Do you feel that records of permanent value are being lost with the increased use of personal computers and office automation systems?

2.12 Have you had to retrieve records of permanent value in electronic format? For what purpose? (e.g. legal investigation, parliamentary inquiry, etc.)

2.13 Were you able to locate what you needed? Could you have found it more easily if it had still been in paper?

2.14 In your Ministry, who has the authority to establish policy relating to record keeping?

2.15 Whom do you hold accountable for implementation?

2.16 As an administrator who has a vested interest in ensuring that the records containing electronic information are accurate and complete and are retained properly for use as long as they are required, do you see yourself as a record keeper?

2.17 What kind of guidance from central agencies would be helpful? From where? (National Archives, MAMPU, MEMOS).

Section 3: Legislative Framework

3.1 Is there any legislation and regulations governing management and long- term preservation of electronic records in your ministry? (Please give detail).

3.2 Is there any legislation and regulations governing management and short-term preservation of electronic records in your ministry? (Please give detail).

3.3 Does the preservation of electronic records become the responsibility of the Ministry or the National Archives? If it is the responsibility of the National Archives, at what stage does short term preservation cease with electronic records being transferred to the Archives?

3.4 Does general archival legislation include electronic records? Is this likely to change in the near future?

3.5 Have regulations or guidelines been issued under existing legislative provisions dealing with the management of electronic records in the Ministry? Is this likely to change in the near future?

Section 3: Existing Records Management Resources

3.1 Is there any existing guidelines, rules and regulations within your Ministry to cater specifically for you as administrator and other administrators in the Ministry for the creation, use, maintenance, dissemination, disposition and preservation of electronic records?

3.2 Is there any existing facility within your Ministry to cater specifically for the storage and preservation of electronic records?

3.3 From when does it date? (Give year).

3.4 Please provide outline details of the size of this facility expressed in terms of:

- the number of staff employed.
- the type of staff.
- their professional specialisation and training.

3.5 Please provide a summary description of the type and date ranges of holdings.

3.6 Please provide information on the current hardware resources of this facility.

3.7 Please provide information on the current software resources of this facility.

3.8 Do you have any responsibility for the control over electronic records in the active stage?

Section 4: Organisational Framework

4.1 Is there a division within this Ministry with which the Administrative Department liaises to formulate guidelines for the long-term preservation of electronic records?

4.2 Is there an institution (or institutions) with which your Ministry liaises to formulate guidelines for the long-term preservation of electronic records?

4.3 Is there an institution (or institutions) with which your Ministry liaises to formulate guidelines for the short-term preservation of electronic records?

Section 5: Archival Policy

5.1 What is the policy of your Ministry in relation to electronic records (i.e. - is it the intention that the Ministry or the National Archives or other agencies should be the long-term repository for archival electronic records?)

5.2 If the National Archives is not going to be the long-term repository for electronic records, and such records are to be kept by the Ministry, please give details of this arrangement.

5.3 If the National Archives is not going to be the long-term repository for electronic records, and such records are to be kept under contract by a third party, please give details of this arrangement.

5.4 Did you liaise with the IT Department pertaining to the management of electronic records?

5.5 Please provide any references (published reports, www pages, etc.) to existing and planned preservation policy.

Section 6: Knowledge and Skills on Creation/ Appraisal/Acquisition/Disposition of Electronic Records

6.1 Have such records yet been appraised? By whom?

6.2 How was this done?

6.3 What staff were involved?

6.4 Does your Ministry employ IT personnel to be in charged of the electronic records? (how many and what are their responsibility?)

6.5 If you or any of your subordinate administrative staff involved in the creation, appraisal, acquisition, disposition and preservation of electronic records, in your opinion is the knowledge on electronic records management and IT is adequate to carry out such responsibility?

6.6 What was their training and specialisation to carry out this tasks? If it is insufficient what was lacking?

6.7 In the case of electronic records deemed worthy of preservation, what arrangements have been made for their preservation?

6.8 Where paper-based records are intrinsically related to electronic records how is this handled?

Section 7: Standards for Preservation of Electronic Media

7.1 If an electronic records centre currently exists (either within the Ministry or at separate institution) what are the accepted forms of media for preservation? (open reel tape, cassette, optical disk or other).

7.2 How many copies are preserved and at how many locations?

7.3 Are such records stored in a software-dependent format or are they transferred to a standard format such as ASCII or EBCDIC?

7.4 Have any regulatory standards been implemented in relation to record formats, or are there any plans to implement such standards? If so, please give details.

Section 8: Transfer Arrangements

8.1 What are the practical arrangements for transfer of electronic records to the agency which preserves electronic records on behalf of the Ministry?

8.2 At what stage in their life cycle are such records transferred?
8.3 What documentation accompanies the transfer?

Section 9: Access Arrangements

9.1 What are the means of access for you and your subordinates wishing to use electronic records?
9.2 Can data be accessed on-line?
9.3 In what formats are copies of data supplied?

Section 10: Finding Aids to Electronic Records

10.1 What is the policy concerning accessibility of records in their active stage? What approaches are taken, for instance about metadata infrastructure?
10.2 How are these compiled?
10.3 What information do they contain (i.e. - is information technical as well as descriptive?)
10.4 Are such finding-aids available on-line?

Section 11: Projected Requirements

11.1 What changes need to be put in place to establish a satisfactory electronic records policy (for instance with respect to legal context, training etc.)? Please give details of any plans to implement the necessary changes.
11.2 What hardware resources are likely to be required to maintain an electronic records programme in the next five years?
11.3 What staff resources are likely to be required to maintain an electronic records programme in the next five years?

Section 12: Provision for Education and Training

12.1 Has the Ministry developed any new awareness or training programmes/opportunities related to the management of electronic records for administrators of this Ministry?
12.2 Who participates in the new training? (new staff, junior staff, senior staff, records managers, archivists, administrators, IT personnel, others?)
12.3 What does the new training entail? Please describe and give course outlines or documentation.
12.4 Does your Ministry have a policy regarding the provision of education and training programme support for administrators, records managers, archivists and IT personnel to manage electronic records in the Ministry? Describe the policy. If there is no policy, why not and what is missing?
12.5 Is there any standard or benchmark on education and training of administrators to manage electronic records to be used by your Ministry?
12.6 Is there any guides produced by your Department/Ministry on electronic record keeping?
12.7 Is there any existing education and training model used by your Ministry in educating and training together the administrators, records managers, archivists and IT personnel to manage electronic records?

12.8 Does your Ministry work cooperatively with the National Archives of Malaysia on education and training of administrators to manage electronic records?

12.9 Do you have access to people, either within or outside your Ministry, whom you regard as experts in some areas of education and training of electronic records management?

12.10 Do you think the education and training for administrators are adequate in relation to the creation, selection, maintenance and preservation of electronic records?

12.11 What measures are being taken to ensure that adequate education and training in relation to electronic records is being provided? (Give examples of any special training courses, indicating if these are internal or external).

Section 13: Issues and Views

13.1 Is your Ministry involved in electronic records management strategies in relation to the implementation of the government wide EG project?

13.2 What do you see as the main issues your Ministry faces or will face related to education and training of record keepers in managing electronic records.

13.3 From your perspective, how best should education and training of record keepers in managing electronic records be provided?

13.4 Are there any general comments you wish to make about education and training for record keepers in managing electronic records?

13.5 Are you willing to participate further in this study? If you are willing, please provide your e-mail address.

Appendix 7

Main area of focus for the interview questions for IT personnel in the Prime Minister's Department (Malaysia) who participated in Phase 4 of the study

Main area of focus for the interview questions for IT personnel from the Prime Minister's Department:

Section 1: Introduction

1.1 How long have you been working for this Ministry? Where did you work before?
1.2 Which category of civil service scheme do you belong to?
1.3 Could you explain about your present job in the Ministry? (please attach job specification)

Section 2: Information system design

2.1 What type of office automation systems adopted by this Ministry? (microcomputers or integrated office automation systems) To what extent?
2.2 What kind of hardware and peripherals are involved? (mainframe computer, minicomputer, microcomputer, special input/output devices e.g. OCR, transceivers etc, other).
2.3 Is there a Ministry-wide policy on hardware architectures or vendors? (If yes, please describe or supply a copy of it).
2.4 What types of software are in use? (word processing, spreadsheet, database management system, direct data entry, other).
2.5 Is there a ministry-wide policy on software applications or vendors? (If yes, please describe or supply a copy of it).
2.6 Who were involved at the point of system design and development process? (IT personnel, administrators, auditors, records managers, archivists- to comply to the need of end-users needs) or do you communicate with these staff before designing or purchasing or adopting the systems?
2.7 Is the creation of data files in your existing systems is in accordance to a particular standards to ensure the consistency of data or to protect the data? (Please describe)
2.8 Is there any form of classification and indexing of information created by the systems? (Please describe and explain)
2.9 Is metadata being created for your information systems? (metadata as information management tool to preserve the context, content, and structure of electronic records). (Explain).
2.10 Explain the security of data and information.
2.11 Is there any form of control for any changes or amendments of information in the systems?
2.12 How do you ensure reliability and integrity of information in your systems? (Explain).
2.13 How do you ensure the completeness of information in your systems? (Explain)
2.14 How do you ensure the authenticity of information in your systems? (Explain).
2.15 Are you aware that electronic records reside in your information systems?
2.16 Do the office automation systems in your Ministry distinguish records from non-record materials? (Explain)
2.17 Do the office automation systems in your Ministry distinguish "temporary records" from "permanent records". (Explain).

Section 3: Recordkeeping requirements

3.1 Have the IT personnel in your Ministry been made aware of recordkeeping requirements to be included in the Ministry automation systems? (Ministry directives, National Archives directives, briefings, EG Committee directives, memoranda, Government Circular Letters, other) Explain.

3.2 Do you or other IT staff determine whether or not particular documents are records? (Explain).

3.3 Do you or any of your staff "filed" electronic documents? How this is done?

3.4 Do the Ministry staff used e-mail for official communication? or who is authorised to send official e-mail?

3.5 Is outgoing and incoming e-mail routinely copied to third parties? (unit secretary, records office, registry/central files, other).

3.6 Is outgoing and incoming e-mail indexed? (If yes, how?) (originator, system supplied unique id, other)

3.7 Who controls the file copy of outgoing e-mail? (originator of e-mail, programme manager, computer centre staff, records management staff, legal counsel, other).

3.8 Who control the file copy of incoming e-mail? (recipient, computer centre staff, other)

3.9 Has use of the e-mail communication presented any problems not readily resolved by paper-based records management and archives practices and methodologies? If yes, what were the problems and how were they handled?

3.10 Who is responsible for e-mail management policy?

3.11 Is a distinction made between "official" and "unofficial" material that is sent by e-mail? If yes, on what basis is electronically material considered to be "official" record material? (never- record copy is on paper or in central store; when it has official sign-off; when the sender or recipient is a program head; other)

3.12 What criteria is used if e-mail communications are saved? (is there a policy? Is it depend on subject matter or formality?

3.13 For e-mail communications that are saved, for how long they are retained? Where they are retained? In what medium are they retained? Do these retention policies differ in any way from those that govern other electronic records (e.g. documents and reports stored in machine-readable form)?

Section 4: Legislative framework

4.1 Please give details of the legislation and regulations governing management and long-term preservation of electronic records.

4.2 Please give details of the legislation and regulations governing management and short-term preservation of electronic records.

4.3 At what stage does short-term preservation cease with electronic records being transferred to the Archives, or does preservation become the responsibility of the National Archives?

4.4 Does separate legislation exist covering electronic records? Is this likely to change in the near future?

4.5 Does general archival legislation include electronic records? Is this likely to change in the near future?

4.6 Does the general information legislation include electronic records?

4.7 Have regulations or guidelines been issued under existing legislative provisions dealing with the management of electronic records? Is this likely to change in the near future?

Section 5: Existing records resources

5.1 Is there any existing facility within the Ministry to cater specifically for the storage and preservation of electronic records?
5.2 From when does it date? (Give date)
5.3 Please provide outline details of the size of this facility expressed in terms of:
- the number of staff employed;
- the type of staff;
- their professional specialisation and training.

5.4 Please provide a summary description of the type and date ranges of holdings.
5.5 Please provide information on the current hardware resources of this facility.
5.6 Please provide information on the current software resources of this facility.
5.7 Do you communicate with the archivists from the National Archives regarding the management of this facility?

Section 6: Organisational framework

6.1 Is there an institution (or institutions) with which the Ministry liaises to formulate guidelines for the long-term and short-term preservation of electronic records?

Section 7: Archival policy

7.1 What is the policy of the Ministry in relation to electronic records (i.e. - is it the intention that the Ministry should be the long-term repository for archival electronic records?)
7.2 If the Ministry is not going to be the long-term repository for electronic records, and such records are to be kept by the National Archives, please give details of this arrangement.
7.3 If the National Archives is not going to be the long-term repository for electronic records, and such records are to be kept under contract by a third party, please give details of this arrangement.
7.4 What is the relationship between the Ministry and other suppliers and custodian of digital information, e.g. MEMOS, MAMPU, Multimedia Development Corporation (MDC) etc.
7.5 Please provide any references (published reports, www pages, etc.) to existing and planned preservation policy.

Section 8: Knowledge and skills on creation/appraisal//disposition/preservation of electronic records

8.1 Are you familiar with the Federal Government requirements for the creation and preservation of government records of archival value?

8.2 Have any electronic records in your Ministry been scheduled for retention or disposal?
8.3 How was this done?

8.4 What staff were involved?
8.5 Do the Ministry records managers have access to and disposition control over electronic records?
8.6 Do the archivists from the National Archives involved in the appraisal and disposition exercise?
8.7 Do the IT personnel posses adequate knowledge on records management to manage electronic records/archives?
8.8 What was their training and specialisation? What was lacking? Do you think it is crucial for them to acquire records management knowledge and skills?
8.9 In the case of electronic records deemed worthy of preservation, what arrangements have been made for their preservation?
8.10 Where paper-based records are intrinsically related to electronic records how is this handled?
8.11 What specific guidance on electronic record keeping do the IT staff need?

Section 9: Standards for preservation of electronic media

9.1 If an electronic records centre currently exists (either within the Ministry or at separate institution) what are the accepted forms of media for preservation? (open reel tape, cassette, optical disk or other).
9.2 How many copies are preserved and at how many locations?
9.3 Are such records stored in a software-dependent format or are they transferred to a standard format such as ASCII or EBCDIC?
9.4 Is there any implementation of data migration and emulation from one generation to another? How this is done?
9.5 Have any regulatory standards been implemented in relation to record formats, or are there any plans to implement such standards? If so, please give details.
9.6 Any kind of environmental control and disaster control planning for the Ministry's systems?

Section 10: Transfer arrangements

10.1 What are the practical arrangements for transfer of electronic records to the National Archives or to the agency which preserves electronic records on behalf of the Ministry?
10.2 At what stage in their life cycle are such records transferred?
10.3 What documentation accompanies the transfer?

Section 11: Access arrangements

11.1 What are the means of access for users wishing to use electronic records at the centre?
11.2 Can users be facilitated within the Ministry or are copies of the records supplied for use in another location?
11.3 Can such records be accessed on-line?

11.4 In what formats are copies of records supplied?

Section 12: Finding aids to electronic records

12.1 What is the policy concerning accessibility? What approaches are taken, for instance about metadata infrastructure?

12.2 How are these compiled?

12.3 What information do they contain (i.e. - is information technical as well as descriptive?)

12.4 Are such finding-aids available on-line?

Section 13: Projected requirements

13.1 What changes need to be put in place to establish a satisfactory electronic records policy (for instance with respect to legal context, training etc.)? Please give details of any plans to implement the necessary changes.

13.2 What hardware resources are likely to be required to maintain an electronic records programmes in the next five years?

13.3 What staff resources are likely to be required to maintain an electronic records programme in the next five years?

Section 14: Provision of education and training

14.1 Has the Ministry developed any new awareness or training programmes/opportunities related to the management of electronic records for the IT personnel, administrators, records managers and archivists?

14.2 Who participates in the new training? (new staff, junior staff, senior staff, records managers, IT personnel, administrators, other).

14.3 What does the new training entail? Please describe and give course outlines or documentation.

14.4 Does your Ministry have a policy regarding the provision of education and training programme support for IT personnel to manage electronic records in the Ministry? Describe the policy. If there is no policy, why not and what is missing?

14.5 Is there any standard or benchmark on education and training of IT personnel to manage electronic records to be used by the Ministry?

14.6 Is there any guides produced by the National Archives or other government agencies such as the Prime Minister's Department or Civil Service Department or The Finance Ministry on electronic record keeping for government record keepers?

14.7 Is there any existing education and training model used by the Ministry in educating and training together the IT personnel, administrators, records managers and archivists to manage electronic records?. Do you think such training model is required?

14.8 Does the Ministry work co-operatively with professional organisations of administrators, records managers, information technology on education and training of IT personnel to manage electronic records?

14.9 Do you have access to people, either within or outside the Ministry, whom you regard as experts in some areas of education and training of electronic records management

14.10 Do you think the education and training for IT personnel are adequate in relation to the selection, preservation and delivery of electronic records to the user?

14.11 What measures are being taken to ensure that adequate education and training in relation to electronic records is being provided? (Give examples of any special training courses, indicating if these are internal or external).

Section 15: issues and views

15.1 Is the Ministry involved in electronic records management strategies in relation to the implementation of the government wide Electronic Government project (MSC)? How?

15.2 What do you see as the main issues your Ministry faces or will face related to education and training of IT personnel, administrators and records managers in managing electronic records?

15.3 From your perspective, how best should education and training of IT personnel, administrators and records managers in managing electronic records be provided?

15.4 Are there any general comments you wish to make about education and training of IT personnel in managing electronic records?

15.5 In the light of the above discussion, do you see yourself and other IT personnel as keeper of electronic records?

15.6 Are you willing to participate further in this study? If you are, please provide your e-mail address.

Appendix 8

Main area of focus for the interview questions for records manager in the Prime Minister's Department (Malaysia) who participated in Phase 4 of the study

Main area of focus for the interview questions for records manager from the Prime Minister's Department:

Section 1: Introduction

1.1 How long have you been working in this Ministry? Where were you attached before joining this Ministry?
1.2 Which category of civil service scheme do you belong to? (A general administrative officer or the diplomatic and administrative officer)
1.3 Could you explain about your appointment as an officer responsible for the Ministry's records.
1.4 Could you explain about your present job and previous job?

Section 2: Extent of usage of electronic records and actual practice

2.1 How many personal computers/office automation systems does your Ministry has?
2.2 Who uses the personal computers/office automation systems in the daily work of your Ministry?
2.3 What impact has the introduction of automation in your Ministry had? (e.g. policy/decision-making, planning, records creation, records maintenance, records preservation, records transfer, traditional registry systems, document routing, your perception of what you consider a record). How do you cope with the impact.
2.4 How are policies and decisions documented in your Ministry? (e.g. circulars, internal directives, memoranda, minutes of meetings etc.).
2.5 What types of documents are likely to be in your Ministry only in electronic form? (Internal directives, final reports, correspondence etc.) and how they are managed?

Section 3: Record keeping requirements

3.1 What steps have been taken by your Ministry to ensure record keeping of programme, policy, operational and administrative decision? (e.g. issuance of general record keeping guidance, issuance of specific record keeping requirements, issuance of directives concerning the making and keeping of records, training concerning record keeping, use of electronic software with built in controls).
3.2 What types of documentation does your Ministry's record keeping requirements affect? (paper documentation, electronic documentation, optical disks, video/audio tapes, microfilm, other)
3.3 In what ways do your Ministry's record keeping requirements outline steps to be taken to ensure that information is retained as a record? (e.g. by defining what constitute a record, by specifying a file plan, by specifying a retention schedule, by specifying record format/medium, other).
3.4 In what formats does your Ministry's record keeping requirements specify that documents must be retained? (e.g. as a paper record, in microfilm, in electronic form, other).
3.5 Do the automation systems in your Ministry distinguish records from non-records materials? How?
3.6 Do the office automation systems in your Ministry distinguish "temporary records" from "permanent records"? How?

3.7 How have the programme officials in your Ministry been made aware of record keeping requirements? (e.g. memoranda, agency directives, training sessions, briefings, incorporation in user education, National Archives/MAMPU/MEMOS issuance, other).
3.8 To what extent do programme officials in your Ministry comply with the requirements?
3.9 Who actually determines whether or not any particular documents are records? (e.g. creator or recipient of a document, secretaries/administrative assistants, record officer, legal staff, other)
3.10 Who determines what paper documents should be "filed"?
3.11 Who determines what electronic documents should be "filed"? (e.g. departmental heads, programme official, secretarial staff, records officer etc.)
3.12 Has your Ministry issued electronic record keeping requirements relevant to your programme? (explain)
3.13 To what extent do you feel records of long-term value are being lost with the increased use of personal computers and office automation systems? (great extent, small extent, not at all) (elaborate)
3.14 To what reasons do you believe this loss is attributable? (lack of sufficient guidance on what constitute a record; lack of proper storage requirements; lack of familiarity with electronic filing; system obsolescence or incompatability; lack of inadequate storage capability; lack of appropriate disposition requirements; record keeping is low priority; lack of training and education?)

Section 4: Legislative framework

4.1 Please give details of the legislation and regulations governing management and long-term preservation of electronic records.
4.2 Please give details of the legislation and regulations governing management and short-term preservation of electronic records.
4.3 At what stage does short-term preservation cease with electronic records being transferred to the Archives, or does preservation become the responsibility of the Archives?
4.4 Does separate legislation exist covering electronic records? Is this likely to change in the near future?
4.5 Does general archival legislation include electronic records? Is this likely to change in the near future?
4.6 Have regulations or guidelines been issued under existing legislative provisions dealing with the management of electronic records? Is this likely to change in the near future?

Section 5: Existing records resources

5.1 Is there any existing facility within your Ministry to cater specifically for the storage and preservation of electronic records? (describe he nature of the facility).
5.2 From when does it date? (give year).
5.3 Please provide outline details of the size of this facility expressed in terms of:

- the number of staff employed;
- the type of staff;

- their professional specialization and training.

5.4 Please provide detail description of the type and date ranges of holdings.
5.5 Please provide information on the current hardware resources of this facility.
5.6 Do you have any responsibility for the control over electronic records in the active stage and non-active stage? If yes, how this is done? If no, who is in control and how?

Section 6: Organisational framework

6.1 Is there an institution (or institutions) with which your Ministry liaises to formulate guidelines for the long-term preservation of electronic records?
6.2 Is there an institution (or institutions) with which your Ministry liaises to formulate guidelines for the short-term preservation of electronic records?

Section 7: Records/archival policy

7.1 What is the policy of your Ministry in relation to electronic records (i.e. – is it the intention that the Ministry should be the long-term repository for archival electronic records?)
7.2 If the Ministry is going to be the long-term repository for electronic records, and such records are to be kept under contract by a third party, please give details of this arrangement.
7.3 What is the relationship between your Ministry with Central Government Committee on Electronic Government? (such as GITIC etc.).
7.4 Please provide any references (published reports, www pages, etc) to existing and planned preservation policy.

Section 8: Knowledge and skills on appraisal/disposition/preservation of electronic records

8.1 Have such records yet been appraised by you or National Archives?
8.2 How was this done?
8.3 What staff were involved?
8.4 Does your Ministry employ IT personnel to be in charged of the electronic records (How many and what are their responsibility?).
8.5 Do the records mangers/staff posses adequate knowledge and skills to appraise and dispose off and preserve electronic records?
8.6 What was their training and specialisation? What was lacking?
8.7 In the case of records deemed worthy of preservation, what arrangements have been made for their preservation?
8.8 Where paper-based records are intrinsically related to electronic records how is this handled?

Section 9: Standards for preservation of electronic media

9.1 If an electronic records centre currently exists (either within the Ministry or at separate institution) what are the accepted forms of media for preservation? (open reel tape, cassette, optical disk or other).
9.2 How many copies are preserved and at how many locations?

9.3 Are such records stored in a software-dependent format or are they transferred to a standard format such as ASCII or EBCDIC?
9.4 Have any regulatory standards been implemented in relation to record formats, or are there any plans to implement such standards? (e.g. standard issued by SIRIM) If so, please give details.

Section 10: Transfer arrangement

10.1 What are the practical arrangements for transfer of electronic records to the Ministry's records centre, or the National Archives or to the agency which preserves electronic records on behalf of the Ministry or National Archives?
10.2 At what stage in their life cycle are such records transferred?
10.3 What documentation accompanies the transfer?

Section 11: Access Arrangements

11.1 What are the means of access for staff wishing to use electronic records?
11.2 Can staff be facilitated within the Ministry's records centre or are copies of the records supplied for use in another location?
11.3 Can such records be accessed on-line?
11.4 In what formats are copies of records supplied?

Section 12: Finding aids to electronic records

12.1 What is the policy concerning accessibility? What approaches are taken, for instance about metadata infrastructure?
12.2 How are this compiled?
12.3 What information do they contain (i.e – is information technical as well as descriptive?)
12.4 Are such finding-aids available on-line?

Section 13: Projected requirements

13.1 What changes need to be put in place to establish a satisfactory electronic records policy (for instance with respect to legal context, training etc.)? Please give details of any plan to implement the necessary changes.
13.2 What staff resources are likely to be required to maintain an electronic records programme in the next five years in view of the EG project?

Section 14: Provision for education and training

14.1 Has the Ministry developed any new awareness or training programmes/opportunities related to the management of electronic records for the archivists, records managers, administrators and IT personnel?
14.2 Who participate in the new training? (new staff, junior staff, senior staff, records managers, administrators, IT personnel, others).
14.3 What does the new training entail? Please describe and give course outlines or documentation.
14.4 Does your Ministry have a policy regarding the provision of education and training programme support for administrators, records managers/staff, archivists, IT

personnel and others to manage electronic records in the government agencies? Describe the policy. If there is no policy, why not and what is missing?

14.5 Is there standard or benchmark on education and training of record keepers to manage electronic records to be used by the Ministry?

14.6 Is there any guide produce by your Ministry on electronic record keeping for the record keepers attached to the various departments under this Ministry?

14.7 Is there any existing education and training model used by your Ministry in educating and training together administrators, archivists, records managers and IT personnel or others to manage electronic records?

14.8 Does your Ministry liaise with the National Archives or other institutions for the provision of education and training of the Ministry's record keepers in managing electronic records?

14.9 Do you have access to people, either within or outside the National Archives, whom you regard as experts in some areas of education and training of ERM?

14.10 Do you think the education and training for administrators, archivists, and IT personnel are adequate in relation to the selection, preservation and delivery of electronic records to the user?

14.11 What measures are being taken to ensure that adequate education and training in relation to electronic records is being provided? (Give examples of any special training courses, indicating if there are internal or external).

Section 15: Issues and views

15.1 Is your Ministry involved in ERM strategies in relation to the implementation of the EG project?

15.2 What do you see as the main issues your Ministry faces or will face related to education and training of record keepers in managing electronic records?

15.3 From your perspective, how best should education and training of record keepers in managing electronic records be provided?

15.4 Are there any general comments you wish to make about education and training for record keepers in managing electronic records in the federal government?

15.5 Are you willing to participate further in this study? If you are, please provide your e-mail address.

Appendix 9

Main area of focus for the interview questions for archivists in the National Archives of Malaysia who participated in Phase 4 of the study

Main area of focus for the interview questions for archivists from the National Archives of Malaysia:

Section 1: Introduction

1.1 In which division do you work?
1.2 How long have you been working as archivist in the National Archives? And how long in this division/unit?
1.3 What is your designation/job title? Please explain the nature of your present job.

Section 2: Legislative framework

2.1 Please give details of the legislation and regulations governing management and long-term preservation of electronic records.
2.2 Please give details of the legislation and regulations governing management and short-term preservation of electronic records.
2.3 At what stage does short-term preservation cease with electronic records being transferred to the Archives, or does preservation become the responsibility of the Archive?
2.4 Does separate legislation exist covering electronic records? Is this likely to change in the near future?
2.5 Does general archival legislation include electronic records? Is this likely to change in the near future?
2.6 Have regulations or guidelines been issued under existing legislative provisions dealing with the management of electronic records? Is this likely to change in the near future?

Section 3: Existing archival resources

3.1 Is there any existing facility within the National Archives to cater specifically for the storage and preservation of electronic records?
3.2 From when does it date ? (Give year).
3.3 Please provide outline details of the size of this facility expressed in terms of:

- the number of staff employed;
- the type of staff;
- their professional specialisation and training.

3.4 Please provide a summary description of the type and date ranges of holdings.
3.5 Please provide information on the current hardware resources of this facility.
3.6 Please provide information on the current software resources of this facility.
3.7 Do the archivists in the National Archives have any responsibility for control over electronic records in the active stage?

Section 4: Organisational framework

4.1 Is there an institution (or institutions) with which National Archives liaises to formulate guidelines for the long-term preservation of electronic records?
4.2 Is there an institution (or institutions) with which the National Archives liaises to formulate guidelines for the short-term preservation of electronic records?

Section 5: Archival policy

5.1 What is the policy of National Archives in relation to electronic records (i.e. - is it the intention that the National Archives should be the long-term repository for archival electronic records?)

5.2 If the National Archives is not going to be the long-term repository for electronic records, and such records are to be kept by the creating agencies, please give details of this arrangement.

5.3 If the National Archives is not going to be the long-term repository for electronic records, and such records are to be kept under contract by a third party, please give details of this arrangement.

5.4 What is the relationship between the National Archives and other suppliers and custodians of digital information, e.g. libraries and museums?

5.5 Please provide any references (published reports, www pages, etc.) to existing and planned preservation policy.

Section 6: Knowledge and skills on appraisal/acquisition/disposition/preservation of electronic records

6.1 Have such records yet been appraised by the National Archives?

6.2 How was this done?

6.3 What staff were involved?

6.4 Does the National Archives employ IT personnel to be in charged of the electronic records? (how many and what are their responsibility?)

6.5 Do the archivists posses adequate knowledge on IT to appraise, acquire and dispose off and preserve electronic records?

6.6 Do the IT personnel posses adequate knowledge on records management to manage electronic records/archives?

6.7 What was their training and specialisation? What was lacking?

6.8 In the case of records deemed worthy of preservation, what arrangements have been made for their preservation?

6.9 Where paper-based records are intrinsically related to electronic records how is this handled?

Section 7: Standards for preservation of electronic media

7.1 If an electronic records centre currently exists (either within the National Archives or at separate institution) what are the accepted forms of media for preservation? (open reel tape, cassette, optical disk or other).

7.2 How many copies are preserved and at how many locations?

7.3 Are such records stored in a software-dependent format or are they transferred to a standard format such as ASCII or EBCDIC?

7.4 Have any regulatory standards been implemented in relation to record formats, or are there any plans to implement such standards? If so, please give details.

Section 8: Transfer arrangements

8.1 What are the practical arrangements for transfer of electronic records to the National Archives or to the agency which preserves electronic records on behalf of the National Archives?

8.2 At what stage in their life cycle are such records transferred?
8.3 What documentation accompanies the transfer?

Section 9: Access arrangements

9.1 What are the means of access for researchers wishing to use electronic records?
9.2 Can researchers be facilitated within the National Archives or are copies of the data supplied for use in another location?
9.3 Can such data be accessed on-line?
9.4 In what formats are copies of data supplied.

Section 10: Finding aids to electronic records

10.1 What is the policy concerning accessibility? What approaches are taken, for instance about metadata infrastructure?
10.2 How are these compiled?
10.3 What information do they contain (i.e.- is information technical as well as descriptive?)
10.4 Are such finding-aids available on-line?

Section 11: Projected requirements

11.1 What changes need to be put in place to establish a satisfactory electronic records policy (for instance with respect to legal context, training etc.)? Please give details of any plans to implement the necessary changes.
11.2 What hardware resources are likely to be required to maintain an electronic records programme in the next five years?
11.3 What staff resources are likely to be required to maintain an electronic records programme in the next five years?

Section 12: Provision for education and training

12.1 Has the National Archives developed any new awareness or training programmes/opportunities related to the management of electronic records for the archivists, records managers, administrators and IT personnel?
12.2 Who participates in the new training? (new staff, junior staff, senior staff, records managers, archivists, administrators, IT personnel, others?)
12.3 What does the new training entail? Please describe and give course outlines or documentation.
12.4 Does your organisation have a policy regarding the provision of education and training programme support for administrators, records managers, archivists and IT personnel to manage electronic records in the government agencies? Describe the policy. If there is no policy, why not and what is missing?
12.5 Is there any standard or benchmark on education and training of record keepers to manage electronic records to be used by government agencies or the National Archives?
12.6 Is there any guides produced by the National Archives on electronic record keeping for government record keepers?

12.7 Is there any existing education and training model used by the National Archives or government agencies in educating and training together the administrators, records managers, archivists and IT personnel to manage electronic records?

12.8 Is the National Archives involved in supporting universities' tertiary programmes for record keepers in electronic records management?

12.9 Does the National Archives work co-operatively with existing professional organisations of administrators, records, archives, information management and information technology on education and training of record keepers in managing electronic records?

12.10 Do you have access to people, either within or outside the National Archives, whom you regard as experts in some areas of education and training of electronic records management?

12.11 Do you think the education and training for archivists/records managers/administrators and IT personnel are adequate in relation to the selection, preservation and delivery of electronic records to the user?

12.12 What measures are being taken to ensure that adequate education and training in relation to electronic records is being provided? (Give examples of any special training courses, indicating if these are internal or external).

Section 13: Issues and views

13.1 Is the National Archives involved in electronic records management strategies in relation to the implementation of the government wide Electronic Government?

13.2 What do you see as the main issues your organisation faces or will face related to education and training of record keepers in managing electronic records.

13.3 From your perspective, how best should education and training of record keepers in managing electronic records be provided?

13.4 Are there any general comments you wish to make about education and training for record keepers in managing electronic records?

13.5 Are you willing to participate further in this study? If you are willing, please provide your e-mail address.

Appendix 10

Focus Group Notes (Agenda of Focus Group Discussions and main area of focus in the discussions conducted in Phase 5 of the study)

Focus Group Notes

1.0 Introduction

1.1 Ph.D study:
The purpose of the research is to develop a conceptual framework model of education and training for the Malaysian record keepers (archivists, records managers, IT personnel and administrators) to manage electronic records.

1.2 The purpose of this focus group within the study:
To test generic model of vocational and professional education and training on electronic records management:

1.2.1 in the context of Malaysia.
1.2.2 with range of stakeholder groups (archivists, records managers, IT personnel and administrators).
1.2.3 covering both education and training.
1.2.4 to test the generic model in series of 5 workshops:

1.2.4.1 workshop 1 with archivists
1.2.4.2 workshop 2 with records managers
1.2.4.3 workshop 3 with IT personnel
1.2.4.4 workshop 4 with administrators
1.2.4.5 workshop 5 with representatives of each group.

1.3 Preview of model in diagrammatic form.

2.0 Focus group questions

2.1 Immediate reaction to the diagram. Anything missing?

2.2 Why (archivists, records managers, IT personnel and administrators) in your Ministry need education and training on electronic records management?

2.3 How building partnership among the target groups (archivists, records managers, IT personnel and administrators) in the federal Ministries would work?

2.4 Who in the federal government's administration need education and training on electronic records management?

2.5 Who in your Ministry needs education and training on electronic records management?

2.6 Can you suggest how you would identify (archivists, records mangers, IT personnel, administrators) according to their education and training needs?

2.7 What types of education and training are suitable for the various categories of (archivists, records managers, IT personnel, administrators) in your ministry?

2.8 Can you suggest the curriculum/modules for education and training that are suitable and sufficient for the (archivists, records mangers, IT personnel, administrators) to perform their roles and responsibilities on electronic records?

2.9 Can you suggest the types of learning approaches that are suitable for the (archivists, records mangers, IT personnel, administrators) in your ministry to acquire knowledge and skills on electronic records?

2.10 Please suggest the mode of delivery that is suitable for the different categories of (archivists, records managers, IT personnel, administrators) to be able to acquire knowledge and skills through education and training.

2.11 What do you think the appropriate award suitable for the various categories of (archivists, records mangers, IT personnel, administrators) upon completion of their education and training?

2.12 Would (archivists, records mangers, IT personnel, administrators) need both education and training on electronic records management?

2.13 In what form can a mutually rewarding partnership exist?

2.14 How education and training suggested in this discussion would work in Malaysia?

3.0 Concluding remark.